


**APPRAISAL OF ROYCE AREAS 147 AND 148
IN ILLINOIS AND WISCONSIN-1829**

To Franklin J. Reis

with Best wishes

Walter R. Kuehnle



Digitized by the Internet Archive
in 2012 with funding from
University of Illinois Urbana-Champaign

<http://archive.org/details/appraisalofroyce00kueh>

APPRAISAL OF ROYCE AREAS 147 AND 148

APPRAISAL OF

ROYCE AREAS 147 AND 148

**In the
States of Illinois and Wisconsin,
Ceded to the United States
by the Chippewa, Ottawa and
Potawatomi Nations of Indians**

Valuation Date: July 29, 1829

**Cases Nos. 13-L, 15-K, 18-I,
29-J, 40-J and 217
before the
Indian Claims Commission**

**Prepared for the
United States Department of Justice
by
Walter R. Kuehnle, M.A.I.
Chicago, Illinois
May 26, 1958**

Typeset by Multicopy Corporation
Evanston, Illinois
Printed by ACE Offset Corporation
Chicago, Illinois

Q. 333 53
K 95a
cop. 3

WALTER R. KUEHNLE & COMPANY

Real Estate Appraisers & Consultants

22 West Monroe Street

CHICAGO 3

DEarborn 2-4000

May 26, 1958

Mr. Perry W. Morton
Assistant Attorney General
Lands Division
Department of Justice
Washington, D. C.

Re: Appraisal of lands in Illinois and Wisconsin
designated Royce Area 147, Wisconsin 1,
Illinois 2, and Royce Area 148, Illinois 2.
Your File No. 90-2-20-430.

Dear Sir:

In accordance with your request and authorization under Contract No. J-39760 dated November 10, 1954, I have appraised the fair market value as of July 29, 1829 of the lands designated in this report as Areas 147, 148A and 148B, all described on the following page.

It is my opinion that the fair market values of these areas, as units, to a typical buyer as of July 29, 1829 in terms of cash were as follows:

<u>Tract No. 1:</u> Area 147, as a unit,	
1,381,786 acres at 35 cents per acre,	\$480,000
<u>Tract No. 2:</u> Area 148A, as a unit,	
499,773 acres at 22 cents per acre,	110,000
<u>Tract No. 3:</u> Area 148B, as a unit,	
1,647,390 acres at 14 cents per acre,	<u>230,000</u>
Total value of Areas 147, 148A and 148B,	
3,528,949 acres,	\$820,000

I certify that I have no financial interest in the outcome of any litigation involving either the title or value of these lands. I further state that I have presented to the best of my knowledge and ability the essential facts supporting my ultimate conclusions relating to the fair market values of these lands as of July 29, 1829.

Respectfully submitted,

M. A. I.



LOCATION AND ACREAGE OF CEDED LANDS

Location

Tract No. 1 — Royce Area 147, Wisconsin 1, Illinois 2, as a unit, less the two (2) reserves retained by the United States under Article 2 of the Treaty of August 24, 1816. The location of the first of these reserves, designated as Royce Area 78(a), Wisconsin 1, consisting of three (3) leagues square, was definitely fixed by the 1816 treaty at the mouth of the Wisconsin River. However, the location of the second reserve retained by the United States under the terms of the 1816 treaty was left for later selection. It was to consist in the aggregate of not to exceed five (5) leagues square and to be located at random in such tracts within Area 147 and at such places on or near the Wisconsin and Mississippi Rivers as the President might think proper to reserve. Consequently, the latter tracts consisting in the aggregate of five (5) leagues square, or 144,000 acres, are not delineated upon Royce maps of Illinois and Wisconsin.

Tract No. 2 — Royce Area 148, Wisconsin 1, Illinois 2. I have been advised that a question of Indian title is involved with respect to that portion of Area 148 lying to the east of the Fox River in Illinois. As a result, the Department of Justice has requested that I make separate appraisals of the lands of Area 148 separated by that river. This has been done. The portion lying to the east of the Fox River for identification purposes is hereinafter referred to as Area 148A, while that to the west of the river has been designated as Area 148B.

The tracts as above described constitute the lands under my appraisal as of July 29, 1829. I have made a careful acreage computation of 3,689,589 acres for these areas, exclusive of the three (3) leagues square reserve of 51,840 acres the location of which was fixed by the 1816 treaty at the mouth of the Wisconsin River. This total acreage of 3,689,589 acres for Areas 147, 148A and 148B, however, includes the five (5) leagues square reserve, or 144,000 acres, retained by the United States under Article 2 of the 1816 treaty, and provided to be thereafter selected within Area 147 in such tracts or at such places on or near the Wisconsin and Mississippi Rivers as the President might think proper.

Another reservation, under Articles III and IV of the Treaty of July 29, 1829, set aside the following individual Indian reserves, to the chiefs and tribal members, out of the ceded lands:

1. Within Area 147, 2 sections, or	1,280 acres
2. Within Area 148A, 16 sections, or	10,240 acres
3. Within Area 148B, 8 sections, or	5,120 acres
Total individual Indian reserves 26 sections, or	16,640 acres

When these additional reserves of acreage of not to exceed five (5) leagues square, or 144,000 acres, and the 16,640 acre total of individual reserves for chiefs and tribal members are deducted from the total acreage of 3,689,589 acres, there is left a net acreage of 3,528,949 acres for Areas 147, 148A and 148B which has been evaluated by this appraiser as of the cession date.

Acreage

The net acreages of the lands ceded to the United States under the Treaty of July 29, 1829, 7 Stat. 320, after deductions for reservations as outlined above is summarized as follows:

Tracts	Acres
1. Area 147, Wisconsin 1, Illinois 2	1,381,786
2. Area 148A, (the portion of Area 148 East of Fox River)	499,773
3. Area 148B, (the portion of Area 148 West of Fox River)	1,647,390
Total acreage of ceded lands	3,528,949

All fractional boundary sections within the Areas 147, 148A and 148B were computed by the Bureau of Land Management, of the United States Department of Interior, at the request of the Department of Justice. The acreages of all other sections or fractional sections in the above three areas were taken from the original government township survey maps.

The acreages of all fractional boundary sections within the Areas 147, 148A and 148B were computed by the Bureau of Land Management, of the United States Department of Interior, at the request of the Department of Justice. The acreages of all other sections or fractional sections in the above three areas were taken from the original government township survey maps.

WALTER R. KUEHNLE, 1958

P R E F A C E

On July 29, 1829 the associated Indian nations of Chippewa, Ottawa and Potawatomes, on the waters of the Illinois, Milwaukee and Manitowoc Rivers, entered into a treaty in which they ceded to the United States 3,528,949 acres of land in southwestern Wisconsin and northern Illinois. This volume is an appraisal of the value of those lands as of that date.

In order to make a competent retrospective appraisal of such an area, it is necessary for the appraiser to first have both a detailed description and the exact acreage of the land composing the whole. For this reason, each section and fractional section in this report was first studied and then described as to its topography, as well as to the amount and character of timber and prairie which it contained. In Area 147 the indicated areas of mineral lead deposits were also described and defined. This information was recorded and punched on 6,365 International Business Machine tabulating cards, which were then automatically classified and tabulated. As a result, my valuation estimate, as shown in this volume, was concluded with an accurate knowledge of the various types of land, and the exact number of acres of each type, constituting every individual section or fractional section lying within the entire subject property.

Starting from such a complete understanding of the size and composition of the subject area, it was possible to divide the total acreage of the lands in the subject areas into several typical land classes, reflecting an 1829 "pioneer's eye-view" for separate appraisal consideration. The relative market desirability of each typical class was then ascertained from demonstrated historical demand which is indicated by the number of acres offered and sold in each class, between 1823 and 1830, in the most popular area for settlement in Illinois during those years.

There were retail sales and offerings, at that time, of from 80 acres up to 3,000 acre lots by the United States, the State of Illinois, private individuals and speculators, but no large tract sales, up to and including the year 1829, pertinent to the value of the subject area. From historical data concerning such sales and rate of sales, and contemporary interest rates demanded on investment, it was possible to develop the relative fair market value for large tracts such as the subject areas, based upon their resale potential in saleable sizes. Part of these subject lands were in a mineral (lead) region. The value that might have been added to these lands, due to the possible existence of mineral deposits was also considered, in the light of ownership; and a prior claim, by the United States, to 144,000 acres of discovered and undiscovered lead deposits.

The research for this study has involved not only a search for existing data but much original research. It has been time - consuming, because each avenue of study disclosed new avenues and collateral branches which appeared pertinent to a thorough study of the facts. However, the resulting labors, although tedious and seemingly endless, have been most rewarding, in that they have permitted a factually supported conclusion as to the value of the subject areas as of 1829. This volume contains data divulged by this research, both directly and indirectly related to an informed conclusion, as to the fair market value of the subject areas. A great deal of the data developed in my research, although interesting, has only a remote bearing on the value of the subject lands, and in the interest of brevity has been omitted from this volume. I have, however, endeavored to include not only the direct facts but also enough of the historical background of the period to permit the reader to do as I have attempted to do; recapture the spirit and point of view of a prospective purchaser for the subject area, living in the year of 1829. No more serious mistake could be made, in connection with this retrospective estimate of the value of the subject properties, than to substitute a present viewpoint for that which existed in 1829.

In completing the research for historical records and data necessary to recreate the contemporary conditions of 1829, I have received valuable assistance from the United States Bureau of Land Management, the United States Geological Survey, the National Archives, State and County Officials of Illinois, various librarians, and certain department heads and faculty members of the University of Illinois.

Especially to Arthur F. Hagner, Ph.D., professor of geology, Robert O. Harvey, D.B.A., associate professor of finance, Donald L. Kemmerer, Ph.D. professor of economics, James W. Leonard, D.B.A., associate professor of finance, Russell T. Odell, Ph.D., professor of soil physics and director of soil survey, department of agronomy, Richard H. Rust, Ph.D., assistant professor of soils, department of agronomy (subsequently assistant professor of soils, Division of Agriculture, University of Minnesota, St. Paul), Charles L. Stewart, Ph.D., professor of agricultural economics and head of division of land economics, Vincent I. West, Ph.D. associate professor of agricultural economics and head of division of agricultural prices, all of the University of Illinois, do I express my deep appreciation for the encouragement, counsel and suggestions which they have extended to me.

I am, however, responsible for this appraisal in its entirety.

WALTER R. KUEHNLE, 1958

CONTENTS

General Map	iv
Certified Letter of Valuation	vii
Location and Acreage of Ceded Lands	ix
Preface	xi
List of Tables	xv-xvi
List of Maps and Figures	xvii-xviii
Section I — Description and Location of Subject Areas	1 - 34
Chapter 1 — General Description of the Subject Areas	3 - 13
The Populated Places — Northern Illinois and Wisconsin, Uncharted Wilderness — Topography, Minerals, Soils and Forest Cover — Soil Maps — Original Surveys of Areas 147 and 148 — Boundaries of Areas 147 and 148 — Quantity of Land by Classification — Summary.	
Chapter 2 — Illinois Agriculture in 1829	29 - 34
Character of Settlers — Farming Methods — Economics of Early Illinois Settlement — Trading at New Orleans — Sites Suitable to Settlers — Drainage — Climate — Health — Summary.	
Section II — Conditions Existing in 1829	35 - 66
Chapter 3 — Transportation Facilities United States, Illinois	37 - 44
Illinois Rivers and Markets — Steamboats — Steamboats on the Upper Mississippi — Steamboats on the Illinois River — Steamboats on Lake Michigan — National Roads — Roads in Illinois — Arteries of Transportation in Northern Illinois — Routes to Chicago from Ottawa and the Southwest — Other Routes to Chicago — The Chicago Road — The Vincennes Trace — The Green Bay Trail — Roads to Galena — Summary.	
Chapter 4 — General Conditions and Factors Affecting Land Values in Illinois in 1829	45 - 50
The National Economic Outlook — Economic Outlook — Banks and Lending Institutions in 1829 — Other Indications of Financial Background in 1829 — Interest Rates — Summary.	
Chapter 5 — Settlement Trends and Preferences for Land in Illinois and Wisconsin as of 1829	51 - 58
The Tide of Westward Expansion as of 1829 — Routes of Settlement — The Character and Trends of Illinois Settlement — Summary.	
Chapter 6 — Supply and Demand for Illinois Land to 1829	59 - 66
All Public Land Sales to 1829 — Population Growth vs. Effect Demand — Public Attitude Toward the Land Question — Senate Resolution for Inventory of Public Lands — Significance of the Supply of Land for Settlement — Quantity of Land Sold in Illinois Prior to 1829 — Types of Land Saleable in 1829 — Summary.	
Section III — Study of Contemporary Sales and Consumers' Preference to 1830	67 - 128
Chapter 7 — History and Significance of Sales of Government Land	69 - 75
Public Land Policies Prior to 1800 — Large Tract Land Sales 1787-1795 — Public Land Policies 1800-1820 — Public Land Policies After 1820 — Report on Land Values in 1828 — Summary.	

Chapter 8 — Preferred Land Types	77 - 83
Selected Study Area - Springfield Land Office — Public Land Sales - Original Entries — Character of Sold and Unsold Lands During 1823-1829 — 1829 Timber and Soil Maps Reconstructed — Settlers' Land Preferences Visually Demonstrated — Classification of Land for Statistical Analysis — Sales of Land in 1823-1829 — Preference Shown for Land in Timbered Sections — Preference for Varied Timber-Fertile Prairie Combinations — Timber on Non-Timber Soils — Classifications of Desirability — Classification of Sections — Summary.	
Chapter 9 — The Illinois-Michigan Canal — Sales of Canal Lands Preferred Land Types	101 - 108
Development of Enthusiasm for Canals — Financing Canal Construction — Canal in Ohio in 1829 — The Illinois-Michigan Canal — Early Planning for the Illinois-Michigan Canal — Sale of Canal Lands — Types of Canal Lands Sold — Summary.	
Chapter 10 — Private Land Sales in the Illinois Military Tract	111 - 122
Military Bounty Grants — Indian Opposition — Enlargement of Illinois Military Tract — Description of Area — Issuance of Military Bounty Warrants — Land Speculations — Tax Delinquency and Tax Sales — 1829 Land Sales in Military Tract Reviewed — Sales by Quit Claim and Barter-Sale Deeds — Sales by Warranty Deed — The Larger 1829 Warranty Deed Sales — The 1829 Smaller Warranty Deed Sales of Timbered Lands — 1829 Sales of Non-Timbered Lands — Summary.	
Chapter 11 — Resale Potential — Historical Rates of Land Sale	123 - 128
Rate of Sale in Springfield Land Office — Basis of Estimating Probable Future Rate of Sale — Trend of Sales Rate — Estimated Probable Sale Rate - Subject Areas — Summary — Hindsight - Rate of Sale.	
Section IV — Special Conditions Affecting Lead Area in Area 147	129 - 181
Chapter 12 — History of the Lead Lands Within Area 147 Before 1816	131 - 135
Early History of the Lead Region — Summary.	
Chapter 13 — Geology and Mining	137 - 158
The Upper Mississippi Valley Lead Region — Transportation Facilities within Lead Region — Water and Timber Resources — Geology of the Lead Region — Ore Mineralogy of the Upper Mississippi Valley — Nature of Workable Lead Deposits — Surface Indications of Ore — Mining Methods — Smelting Operations — Distribution of Lead Deposits Within the Area — Location and Extent of Lead Deposits in Area 147 — Area of Recorded Lead Deposits in Area 147 — Lead Deposits by Sections Within Area 147 — Lead Deposit by 40-Acre Tracts Within Area 147 — Summary.	
Chapter 14 — Mining Activity During the 1816-1830 Period	159 - 181
Leasing Policy of the United States During 1861-1821 — The Beginnings of Permanent Settlement — Superintendence and Leasing of Mines After 1821 — First Mineral Leases Granted — The Town of Galena, Illinois 1822-1829 — Mining Permits and Smelter Licenses Issued — Increased Lead Discoveries Under 1825 System — Area of Leases, Licenses and Permits — Immigration to Area 147 in 1828-29 — Increased Occupation of Lead Region — Prospecting for Lead — Change of Conditions in 1829 Within Lead Region — Wages and Entrepreneurs Rewards — Smelter Operations — The Effect of the Slump in the Price of Lead — Rents Lowered on Manufactured Lead in 1830 — Hindsight — Competitive Domestic and World Production of Lead — The Effect of the Protective Tariff on Lead Prices — Summary.	
Section V — Value Conclusion	183 - 190
Chapter 15 — Value Conclusions	185 - 190
Value Indicated by Sales of Large Tracts of Land — Value Indicated by Contemporary Opinions — Influence of Offerings of Canal Lands on Value — Value Indicated by 1829 Military Tract Sales — Probable Extent of Unreserved Mineral Deposits — Estimated Rate of Retail Resale — Justified Retail Value — Conclusions - Justified Purchase Price for Resale — Estimated Fair Market Values.	
Appendix	191 - 203
Qualifications of Appraiser — Bibliography — Index.	

TABLES

	Page
Chapter 1	
Table 1 - A — Areas 147 - 148 — Summary of Total Acreage by Classes	13
Chapter 5	
Table 5 - A — The Proportion between the Total Area of United States and the Settled Area at Each Census	52
Table 5 - B — The Progress for Settlement in United States at Each Census	52
Chapter 6	
Table 6 - A — Public Land Sales in United States 1816 - 1829	59
Table 6 - B — Statement of the Public Lands Surveyed, Sold and Unsold by States and Territories	61
Table 6 - C — Characteristics of Unsold Land in Edwardsville District, Illinois, June 30, 1828	62
Table 6 - D — Characteristics of Sold and Unsold Lands in Three Illinois Land Offices, June 30, 1828	62
Table 6 - E — Public Land Subject to Entry Remaining Unsold (by States) June 30, 1828	63
Table 6 - F — Land Available for Purchase in Illinois in the Period of June 30, 1828 to January 1, 1829	63
Table 6 - G — Statement of Land Sold at Each of the Land Offices July 1, 1829-December 31, 1832	64
Chapter 7	
Table 7 - A — Quantity of Land Relinquished to the United States, Under the Provisions of the Several Laws "for the Relief Purchasers of Public Lands Prior to July 1, 1820."	72
Table 7 - B — Summary of Opinions by Registers and Receivers of the Land Offices in Illinois in Response to a Resolution of the Senate of the United States in 1828	73
Chapter 8	
Table 8 - A — Springfield Land Office Government Land Offered for Sale During 1823-1829 Period	77
Table 8 - B — Springfield Land Office Government Land Offered and Sold During 1823-1829 Period, Five Areas Proclaimed for Sale 1823-1829	79
Table 8 - C — Springfield Land Office Government Land Offered and Sold During 1823 - 1829 Period — Area 1 Proclaimed for Sale in 1823	79
Table 8 - D — Springfield Land Office Government Land Offered and Sold 1823 - 1829 Period— Area 5 Proclaimed for Sale in 1829	80
Table 8 - E — Summary of Percentages of Total Offerings of the Springfield Land Office— Period 1823 - 1829	80
Table 8 - F — Percentage of Offered Land Sold of Highest Preference Groups Springfield Land Office — Period 1823 - 1829	80
Table 8 - G — Percentage of Lands Sold in Timber Sections Without Associated Prairie Soil Groups—Springfield Land Office — Period 1823 - 1829	81
Table 8 - H — Land Offered and Sold in Each of Five Sale Areas Claimed by Percentage of Timber - Prairie —Springfield Land Office — Period 1823 - 1829	81
Table 8 - I — Percentage of Land Sold in Areas Where Timber Was Indicated by Original Government Land Survey on Non-Timber Soils, Springfield Land Office — Period 1823 - 1829	82
Chapter 9	
Table 9 - A — Amount of Land Offered and Sold in January 1830 by the Trustees of Illinois - Michigan Canal Classified by Percentage of Timber and Prairie Soils	107

	Page
Chapter 10	
Table 10 - A — Purchases and Sales in the Illinois Military Tract — 1818 - 1833	115
Table 10 - B — Land Sales — Transfer of Title by Other than Warranty Deed in Illinois Military Tract in 1829	117
Table 10 - C — Land Sales — Transfer of Title by General Warranty Deed in Illinois Military Tract in 1829	118
Table 10 - D — Sales of Four or More Quarter Sections of Land — Transfer of Title by General Warranty Deed in Illinois Military Tract in 1829	119
Table 10 - E — Less than Four Quarter Sections of Land — Transfer of Title by General warranty Deed in Illinois Military Tract in 1829	120
Table 10 - F — Sales of Non-Timbered Land — Transfer of Title by General Warranty Deed in Illinois Military Tract in 1829	121
Table 10 - G — Summary of Land Sales — Transfer of Title by all Deeds in Illinois Military Tract in 1829	121
Chapter 11	
Table 11 - A — Springfield Land Office — Actual Rate of Sale of Class One Sections — 1823 to 1829, Inclusive	123
Table 11 - B — Springfield Land Office — Actual Rate of Sale of Class Two Sections, 1823 to 1829, Inclusive	124
Table 11 - C — Springfield Land Office — Actual Rate of Sale of Class Three Sections, 1823 to 1829, Inclusive	124
Table 11 - D — Summary Springfield Land Office — Actual Rate of Sale by Classifications, 1823 to 1829, Inclusive	125
Table 11 - E — Acreage by Section Classes — Areas 148A, 148B, 147 — Showing Total Available and Projected Sales	127
Table 11 - F — Rate of Sale in Springfield Land Office (1823 - 1829) and Chicago Land Office, Dixon Land Office (1835 - 1848) and Mineral Point Land Office (1835 - 1848) and Estimated Rate of Sale Compared	128
Chapter 13	
Table 13 - A — Distribution of Lead Bearing Lands in the Lead Region within Area 147 by by Townships, Sections and 40 - Acre Tracts, as Indicated by Areas of Early Lead Shafts and Pits (Lead Diggings)	155
Table 13 - B — Distribution of Lead Bearing Lands in the Lead Region Within Area 147 by 160- Acre Units as Indicated by Old Lead Shafts and Pits	156
Table 13 - C — Distribution of Lead Bearing Lands in Lead Region Within Area 147 by 40- Acre Units Indicated by Old Shafts and Pits	156
Chapter 14	
Table 14 - A — Table of Bonded Three - Year Lessees of 320 - Acres	169
Table 14 - B — Table of Bonded One-Year Smelter Licenses of 320 - Acres	169
Table 14 - C — Lead Imports and Upper Mississippi Valley and Missouri Lead Production Compared	173
Table 14 - D — Domestic and World Production of Lead	180
Chapter 15	
Computation of Warranted Value — Area 148A	187
Computation of Warranted Value — Area 148B	188
Computation of Warranted Value — Area 147	188
Table 15 - A — Summary of Value Estimates	190

MAPS AND FIGURES

	Page
Frontispiece	
General Map	iv
Chapter 1	
Map 1 - 1 — Early Transportation of Illinois and Wisconsin	5
Figure 1 - 1 — Original Survey Map Showing the Boundary Lines of Subject Area 148	10
Figure 1 - 2 — Original Survey Map Showing the Boundary Lines of Subject Area 147	11
Index Map of Subject Areas' Soil Maps	17
Soil Map of Iowa and Lafayette Counties, Wisconsin	18
Soil Map of Grant County, Wisconsin	19
Soil Map of Jo Daviess and Stephenson Counties, Illinois	20
Soil Map of Carroll County, Illinois	21
Soil Map of Rock Island County, Illinois	22
Soil Map of Whiteside County, Illinois	23
Soil Map of Bureau and LaSalle Counties, Illinois	24
Soil Map of DeKalb and LaSalle Counties, Illinois	25
Soil Map of Kane, Kendall and LaSalle Counties, Illinois	26
Soil Map of Dupage and Will Counties, Illinois	27
Soil Map of Ogle and Cook Counties, Illinois	28
Chapter 2	
Figure 2 - 1 — Reported Location of Illinois Swamplands by Townships	32
Figure 2 - 2 — Illinois Growing Season	33
Figure 2 - 3 — Yearly Average Rainfall in Illinois	33
Chapter 3	
Figure 3 - 1 — Historical Map of Illinois	41
Chapter 5	
Figure 5 - 1 — Urban and Total Population at Each Census 1790 - 1890	51
Figure 5 - 2 — Number of Inhabitants to the Square Mile at Each Census 1790 - 1890	51
Figure 5 - 3 — Center of Population at Each Census 1790 - 1890	52
Figure 5 - 4 — Early Roads and Canals	53
Figure 5 - 5 — Transportation in Early Nineteenth Century	53
Figure 5 - 6 — Population of Kentucky, Indiana, Ohio, Illinois at Each Census 1800 - 1890	53
Figure 5 - 7 — Population of Illinois per Square Mile in 1820	54
Figure 5 - 8 — Land Offices in Illinois, 1822 to 1830	55
Figure 5 - 9 — Distribution of Prairie and Forest Soils in Illinois	56
Figure 5 - 10 — Illinois in 1830	57
Figure 5 - 10 (A) Illinois in 1830	57
Chapter 8	
Index Map of Comparable Area (Springfield Land Office) Soil Maps	87
Map I - 1 — Land Offered for Sale November 17, 1823	89
Map I - 2 — Land Offered for Sale November 17, 1823	90
Map I - 3 — Land Offered for Sale November 17, 1823	91
Map II — Land Offered for Sale November 1, 1824	93
Map III - 1 — Land Offered for Sale September 25, 1826	94
Map III - 2 — Land Offered for Sale September 25, 1826	95
Map IV - 1 — Land Offered for Sale October 22, 1827	96
Map IV - 2 — Land Offered for Sale October 22, 1827	97
Map V - 1 — Land Offered for Sale November 2, 1829	98
Map V - 2 — Land Offered for Sale November 2, 1829	99
Chapter 9	
Figure 9 - 1 — Principal Canals Built by 1860	102
Figure 9 - 2 — Advertisement in Galena Advertiser January 25, 1830	104
Map 9 - 1 — Illinois - Michigan Canal	105
Map 9 - 2 — Soil Map of Illinois - Michigan Canal	109

	Page
Chapter 10	
Figure 10 - 1 — The Illinois Military Tract	112
Figure 10 - 2 — Forest and Prairie Map of Illinois	113
Chapter 12	
Figure 12 - 1 — William DeLisle's 1703 Chart Showing "Mine De Plomb" (Lead) Near Site of Galena	132-133
Chapter 13	
Figure 13 - 1 — David Dale Owen's Map (1839) Showing Lead Region in Wisconsin and Illinois (Dark Area Within Solid Heavy Black Line). Area 147 Both Within and Out- side of Lead Region, Declineated by Red Separation Line	138
Figure 13 - 2 — Cliff Limestone. The Principal Leadbearing Rock of the District. Note Tendency of Rock to Break Vertically and Form Cliffs	140
Figure 13 - 3 — Cross Section Showing Arrangement of Rocks in Analysis. At Diagrammatic Section of the Region from North to South	140
Figure 13 - 4 — Generalized Stratigraphic Section of the Upper Mississippi Valley Zinc-Lead District	141
Figure 13 - 5 — Diagrammatic Plans and Sections Illustrating Typical Patterns of Gash Vein Lead Deposits	141
Figure 13 - 6 — Arch of Galena (Pbs) on Extension of Hoosier Crevice, Herman Smith Property, SE $\frac{1}{4}$, SE $\frac{1}{4}$, Section 36, Township 29 North, Range 1W, Jo Daviess County, Illinois, 1956	141
Figure 13 - 7 — Entrance and Countryside Above Hoosier Crevice Mine in Jo Daviess County, Illinois	142
Figure 13 - 8 — Diggings of Swindler's Ridge in Area 147 in Lafayette County, Wisconsin Showing How Entire Areas Were Thoroughly Dug Over for "Float" or Residual Lead	143
Figure 13 - 9 — A Change in Slope or "Bench" which is Suggestive of the Presence of a Fis- sure, Possibly Containing Lead	143
Figure 13 - 10 — Cross Section of a Mine Shaft and Underground Workings Showing Rope Used for Descent and Ascent, Windlass, and Timbering in Loose Ground	144
Figure 13 - 11 — Sketch of Log Furnace Situated on Hillside to Take Advantage of Sloping Ground	146
Figure 13 - 12 — Sketch of Ash Furnace	146
Figure 13 - 13 — Map of Mississippi Valley Lead District Showing the Region as David Dale Owen Outlined it in 1839 and as it is Known Today	146
Map 13 - 1 — Lead Mine Locations	149
Figure 13 - 14 — Chandler's 1829 Map of Upper Mississippi Valley Lead Region	151
Figure 13 - 14 (A) Showing the Part of Chandler's Map of Lead Region as Related to Area 147	152
Figure 13 - 15 — Lead Mines and Diggings Outlined in Half Circles	153
Figure 13 - 16 — Diagram of the Area of Indicated Lead Deposits and that of Indicated Lead Deposits in David Dale Owen's Report of the Lead Region Within Area 147	154
Chapter 14	
Figure 14 - 1 — Notice Published in 1816 by General Land Office, Inviting Proposals to Lease Thirty 640-Acre Tracts for Lead Mines in Region Including Area 147	160
Figure 14 - 2 — Town Plat of Galena, Illinois, 1828	163
Figure 14 - 3 — Form of Mining Permit for 300 Yard Square Mining Sites, 1825	164
Figure 14 - 4 — Regulations for Miners Revised the 1st of July, 1827 to go into Operation for the 1st of August, 1827	165-168
Figure 14 - 5 — One of the Thirty-eight Three-year Bonded Leases of 320 Acres for Lead Min- ing Purposes Made by the Secretary of War in the Upper Mississippi Valley Lead Region During the Period of May 21, 1825 and March 8, 1829	170
Figure 14 - 6 — One of the Twenty-two One-year 320-Acre "Smelting" Leases made by the Secretary of War in the Upper Mississippi Valley Lead Region during the Period of May 4, 1825 and February 19, 1828	171
Figure 14 - 7 — The Galena Advertiser Issue of August 31, 1829, Galena, Commented Upon the Hard Times Resulting from the Slump in Lead Prices	175
Figure 14 - 8 — Reported Lead Production and Lead Rent Received by Government During 1823 - 1831	177
Figure 14 - 9 — Official Record of U. S. Ordinance Department Showing the Amounts Paid as the Expenses by the Superintendent in the Upper Mississippi Lead Mine 1829-35	178

I. DESCRIPTION AND LOCATION OF SUBJECT AREAS

Chapter 1

GENERAL DESCRIPTION OF THE SUBJECT AREAS

Royce Areas 147 and 148¹ contain an estimated 3,689,589 acres, of which 3,074,800 acres lie in northern Illinois and the balance in southwestern Wisconsin² (See map — frontispiece.)

In 1829 most of this area was uninhabited and uncharted territory, lying far north of the westward expansion of civilization. (See Map 1-1.) A line, traced on this map of northern Illinois and southern Wisconsin, running southwesterly across Wisconsin from Green Bay on Lake Michigan, to Prairie du Chien on the Mississippi, thence southerly into Illinois down to Galena, and continuing to Fort Armstrong at Rock Island, and thence easterly across Illinois through Ottawa to Chicago, and finally northerly up Lake Michigan into Wisconsin to Green Bay, the point of beginning, omitting Ogee's Ferry established at the Rock River, in 1825 on the Peoria-Galena Road, would cross all of the places in northern Illinois and Wisconsin that were settled at that time. None of these settlements had more than a few hundred people, and of

the country within the traced boundaries, little was known until after the Black Hawk War of 1832.³

The Populated Places

In 1829 the Village of Green Bay had a population of about 1500 persons; this census took into account those living within a day's journey from Green Bay and also included the settlers whose homes bordered on the Fox River.⁴ Prairie du Chien, at the mouth of the Wisconsin River, had approximately 500 residents.⁵ Galena, Illinois, which was the center of congregation in the Upper Mississippi Valley Lead Region in northern Illinois and southern Wisconsin, had an 1829 population of about one thousand persons. In addition, there was a fluctuating population of some two thousand persons in mining camps, in the mining region outside Galena,⁶ in small mining camps or settlements such as Dodgeville and Gratiot's Grove.⁷ The only other populated place in northern Illinois was Fort Clark at Peoria, 180 miles south of Galena.⁸ At

¹ Royce, Charles C, 1896-97 — Indian Land Cessions in the United States — 18th Annual Report of the Bureau of American Ethnology — Part 2 — Plates Illinois 2 and Wisconsin 1.

² These tracts constitute the lands appraised in this report excluding, however, three leagues square at the mouth of the Wisconsin River and five leagues square, to be selected at random, within Royce 147, as provided in Article 2 of the Treaty of August 24, 1816 — 7 Stat. 147. The area of 3,689,589 acres does not include the fixed location of three leagues square at the mouth of the Wisconsin River. It does, however, include the five leagues square (144,000 acres), to be selected at random, leaving a remainder of 3,545,589 acres. Also included in Royce Areas 147 and 148 are individual Indian Reserves under Articles III and IV of the Treaty of July 29, 1829, 7 Stat. 320, as follows:

1. Wau-pon-eh-see (148-A), 3,200 acres; 2. Shab-eh-nay (148-B), 1,280 acres; 3. Awn-Kote (148-B), 2,560 acres; 4. La Framboise (148-A), 640 acres; 5. Alex Robinson (148-A), 1,280 acres; 6. Francois Bourbonne (148-A), 640 acres; 7. Pierre Leclerc (148-B), 640 acres; 8. Waish-kee-Shaw (148-A), 960 acres; 9. Billy Caldwell (148-A), 1,600 acres; 10. Victoire Pothier (148-A), 320 acres; 11. Jane Miranda (148-A), 160 acres; 12. Madeline (148-B), 640 acres; 13. Archange Ouilmette (148-A), 1,280 acres; 14. Antoine and Francois Leclerc (147), 1,280 acres; 15. Mo-ah-way (148-A), 160 acres; total individual Indian Reserves, 16,640 acres. Accordingly, the net acreage of the ceded lands to be appraised is 3,528,949 acres.

³ Prucha, Francis Paul, c 1953 — Broadax and Bayonet: the Role of the United States Army in the Development of the Northwest, 1815 - 1860. State Historical Society of Madison, p. 7f.

Burchard, Edward L., Jan. 1925 — Early Trails and Tides of Travel in the Lead Mines and Black Hawk Country. Illinois State Historical Society Journal, v. 17, No. 4, pp. 577ff., 587.

⁴ Flint, Timothy, 1832 — The History and Geography of the Mississippi Valley. Cincinnati, E. H. Flint and L. R. Lincoln v. I, p. 448, give the population of Green Bay as 952. Durrie, D. S., 1872 — Jonathan Carver and "Carver's Grants," Wisconsin Historical Collections, v. VI, p. 10, gives the 1820 population for Brown County, of which Green Bay was a part, as 1,500.

⁵ op. cit. Prucha, 1953 — Broadax and Bayonet, p. 6. 500 is Prucha's figure for the year 1820.

⁶ op. cit. Flint, 1832 — History and Geography of the Mississippi Valley, v. I, p. 327.

Pooley, William Vipond, 1908 — The Settlement of Illinois from 1830 to 1850. Bulletin of the University of Wisconsin, No. 220, Madison, p. 327, that there were over 2,000 settlers at the Illinois mines, by 1830 and many more at the Wisconsin and Iowa mines.

⁷ Atwater, Caleb, 1831 — Remarks Made on a Tour to Prairie du Chien, Thence to Washington City in 1829. Columbus, Isaac N. Whiting, pp. 187, 190.

⁸ Ballance, C., 1870 — The History of Peoria, Illinois. Peoria, p. 199, gives the population for Peoria for 1825 as 1,236, and for 1830 as 1,792. However, Pooley, op. cit., p. 404, says that in 1832 Peoria was a small village of fifteen or twenty log cabins.

The distance to Peoria is stated in the Galena Advertiser, August 10, 1829.

this time Chicago was scarcely a village, with fewer than one-hundred people.⁹ Of all of the settled places in 1829, only Galena and the Illinois mine patches near to it were within the boundaries of the cessions comprising areas 147 and 148. (See Map 1-1.)

One hundred or so men were garrisoned at each of the forts and there were, at all times, a few civilians living under their wings. The Winnebago War of 1827 led to the establishment of Fort Winnebago, at the portage between the Fox and the Wisconsin Rivers, and to the restoration of Fort Dearborn at Chicago and of Fort Crawford at Prairie du Chien. Fort Howard at Green Bay, and Fort Armstrong at Rock Island, had been established in 1816.¹⁰ None of these forts were actually on the land in either of the cessions, but, obviously, they had great influence on the course of settlement. In this manner, protection was afforded to travelers and traders; the soldiers engaged in construction of buildings and roads; army officers carried out much of the exploration. Until after the Black Hawk War in 1832, supplying the forts, along with the fur trade, was one of the main components of commerce on Lake Michigan and in Northern Illinois.¹¹

Immediately south of, and adjoining Area 148, was a strip of land lying athwart the Illinois and Desplaines Rivers and the portage of the Chicago River, the main artery of transportation through the northern Illinois wilderness. Most of this strip of land which was approximately twenty miles wide, and extending between the future sites of Ottawa and Chicago, was acquired by the United States on August 24, 1816, by treaty with the Potawatomi Indians.¹² In 1827 alternate sections, in a strip five miles wide, comprising 284,000 acres of this cession, on both sides of the waterway, were given to the State of Illinois by the United States, for the purpose of financing construction of a canal between Ottawa and Chicago, along this route. (See Map 9-1)¹³ This was to be a navigable Illinois-Michigan Canal, connecting Lake

Michigan with the Mississippi River, by connecting the Illinois and Chicago Rivers; however, it was not until 1848 that this canal was completed.¹⁴

Northern Illinois & Wisconsin, Uncharted Wilderness

Such were the inhabited places on the rim of the region containing Areas 147 and 148. Of the territory within, except for the prospected lead region in Area 147, there was little factual knowledge. In 1823 a scientific party, under the direction of Stephen H. Long, had marched northwesterly across Illinois and Wisconsin, 228 miles from Fort Dearborn on Lake Michigan at Chicago, to Fort Crawford on the Mississippi River, at Prairie du Chien. They were the first group of white men to successfully complete this trek.¹⁵ However, the prairie grass soon covered their trail, and white men's trade continued to pass over the Mississippi, Illinois and Desplaines Rivers.¹⁶ By 1829 there was little change in the situation. During that year Jefferson Davis, at that time an officer in the Army Engineers, encamped on the site of Madison, Wisconsin, and, many years after the Civil War, wrote about it to a resident of Wisconsin.¹⁷

The nearest Indian village was on the other side of the lake . . . Nothing, as I think, was known to the garrison at Fort Winebago about the Four Lakes (Wisconsin) before I saw them. Indeed, Sir, it may astonish you to learn, in view of the (now) densely populated condition of that country, that I and the file of soldiers who accompanied me were the first white men who ever passed over the country between the portage of the Wisconsin and Fox Rivers, and the then Village of Chicago. . . . When sent out on various expeditions, I crossed the Rock River at different points; but saw no sign of settlement above Dixon's Ferry. (See Map 1-1.)

In 1829 a teamster drove a load of lead by wagon and mule team cross-country from Galena to Chicago in eleven days and returned, with his empty wagon, in eight.¹⁸ His probable route is shown on Map 1 - 1. But this was another isolated incident, because as late as 1830, the year when the City of Chicago was

⁹ Pierce, Bessie Louis, 1937 — *A History of Chicago*. Knopf, New York, v. I. p. 44, gives the population of Chicago in 1829 as thirty inhabitants.

Andreas, A. T., 1884 — *History of Chicago*, Chicago, Vo. I, P. 128, States:

"No record of any enumeration of the inhabitants is extant, and all statements as to the actual population at that time are estimates, based on the whims, impressions, or rumors of the time. It required a population of 150 to form a corporate town organization, and it is not probable that Chicago had more than the required number. Based on the number of voters (twenty-eight) at the first election, and allowing a population of five to each voter, the resident population was 140 in August, 1833."

¹⁰ Quaife, Milo Milton, c 1923 — *Chicago and the Old Northwest, 1673-1835*. University of Chicago Press, Chicago, p. 320f. op. cit. Prucha, c 1953 — *Broadax and Bayonet*, pp. 18f, 24.

¹¹ Ibid. Prucha — pp. 34 - 54 and 104 - 148.

¹² op. cit. Royce, 1896-7 — *Indian Land cessions* — , Area 78, Illinois 1.

¹³ Chapter 9.

¹⁴ Further discussion of the Illinois - Michigan Canal and the Illinois Canal Lands will be found in Chapters 5 and 9.

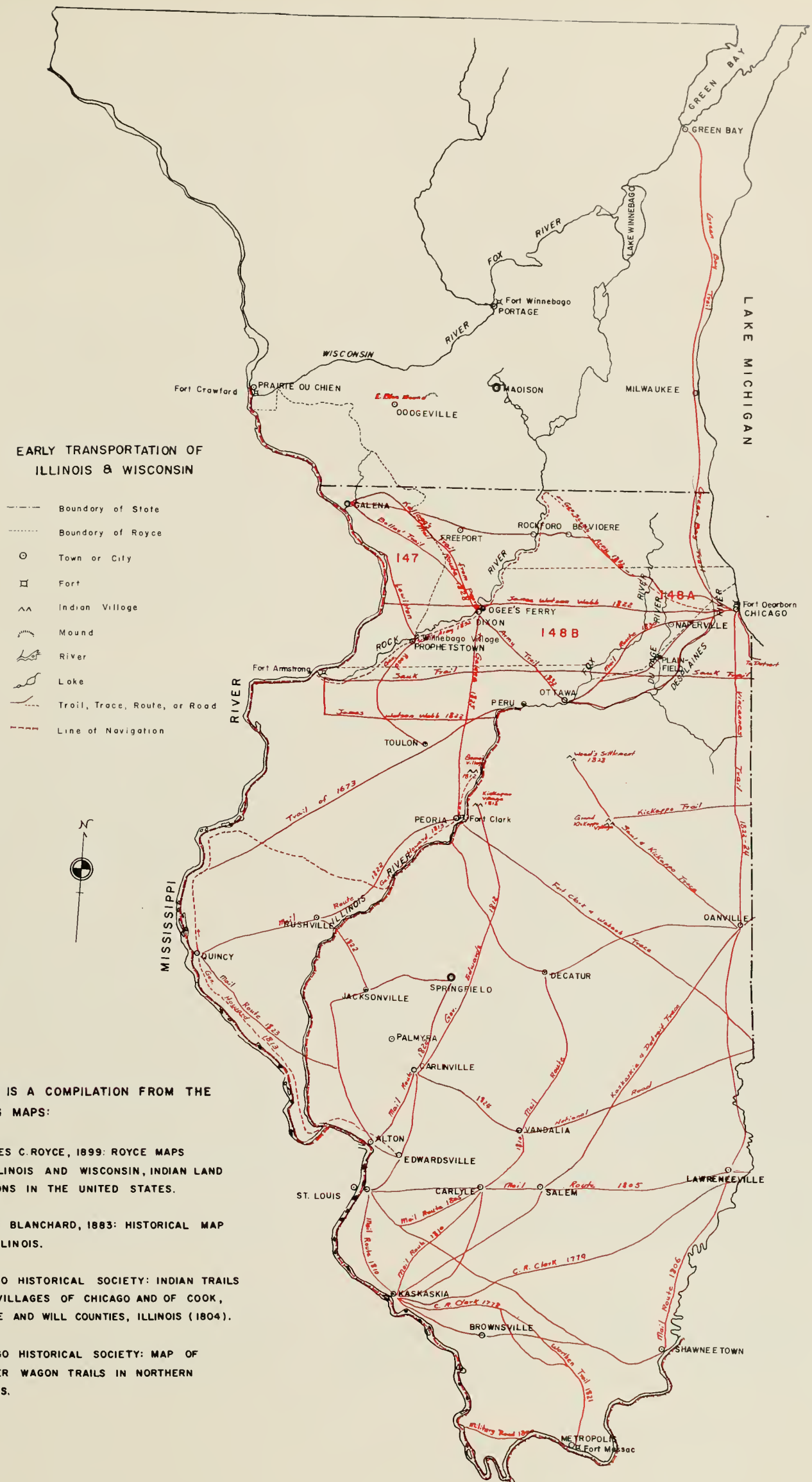
¹⁵ op. cit. Burchard, 1925 — *Early Trails and Tides of Travel in the Lead Mine and Black Hawk Country*. Vol. 17, No. 4, pp. 477 ff.

¹⁶ Ibid. Burchard, p. 587.

¹⁷ Butler, J. D., 1829 — *French Fort at Prairie du Chein and Tay-Cho-Pe-Rah — The Four Lake Country*. Wisconsin Historical Collection, v. 10, p. 75. Ms letter from Beauvoir, Miss., dated February 23, 1885.

op. cit. Atwater, 1831 — *Remarks on a Tour to Prairie du Chien*, p. 193.

¹⁸ Galena Advertiser, September 14, 1829.



GENERAL DESCRIPTION OF THE SUBJECT AREAS

surveyed by the Canal Trustees of the Illinois-Michigan Canal, there were as yet no good wagon trails leading to that village.¹⁹ It was 1831 when Juliette Kinzie, a Connecticut girl, more articulate than most newcomers to northern Illinois, passed across through the prairies of Area 148 en route to Chicago, and later, recording her impressions of the route, wrote:

In this open country there are no landmarks. One elevation is so exactly like another, that if you lose your trail there is almost as little hope of regaining it, as of finding a pathway in the midst of the ocean. . . . The trail, it must be remembered, is not a broad highway, but a narrow path, deeply indented by the hoofs (sic.) of the horses on which the Indians travel in single file. So deeply is it sunk in the sod which covers the prairies that it is difficult, sometimes, to distinguish it at a distance of a few rods. . . . We traveled the live-long day, barely making a halt at noon to bait (sic.) our horses, and refresh ourselves with a luncheon. The ride was as gloomy and desolate as could well be imagined. A rolling prairie, unvaried by forest or stream — Hillock rising after hillock, at every ascent of which we vainly hoped to see a distant fringe of "timber." But the same cheerless, unbounded prospect everywhere met the eye.²⁰

Topography — Minerals — Soils and Forest Cover

Within the confines of these large tracts were many varied conditions of soil and topography. There were lands ranging from fertile to unfertile. They varied from low swampy lands to those that were well-drained. Topography included low, depressional, level, sloping, gently rolling, and rough and broken land. They contained timbered sections, where timber and small prairie combinations existed, and vast untimbered prairies.

The northern part of Area 147 was located in the driftless area which had not been covered by the great ice sheets of the glacial epochs. Here the topographical relief was greater, contour sharper and drainage better than on the glacial plains, forming the balance of Area 147 and Area 148. Although approximately 890,000 acres in this portion of Area 147 was part of a known lead region, the general location of most of the lead lands had been discovered by 1829. The deposits were grouped into districts of patchy distribution with barren ground between and, in total, the area of the actual lead bearing lands was small.²¹

Of the various types of land in Areas 147 and 148, sections combining a "just" proportion of deciduous

hardwood timber with fertile, well-drained prairie would have been most preferred by settlers. On the other end of the scale of preference were prairie lands without timber, which were avoided by the settlers in 1829. A prospective purchaser would first have informed himself as to the quantity and quality of the lands offered, in terms of such classes of settler preference, in order to plan the probable rate at which he had assurance of reselling them for a profit at retail to settlers.

Accordingly, for the purposes of this study of the value of the subject areas as of 1829, all of the lands that they contained are reclassified into simple categories of soil, timber and topographical characteristics that are intended to reflect a "pioneer's eye-view" of the landscape in 1829. Soil maps, reflecting such categories, were constructed, and from such maps, the areas of timber and of each of the soil categories were estimated and tabulated, for each section in the subject area. From this information it was possible to classify all sections into groups or classes of settler desirability, and to estimate the influence of the proportion of sections, in each such classified group, on the purchase price that a prospective purchaser could reasonably have been expected to pay for the subject lands in the year 1829.

Soil Maps — Classification of Subject Lands

Excellent soil maps, now available in Illinois and Wisconsin, were used as the basis of reconstructing new soil maps covering the lands of Areas 147 and 148. These maps were drawn to show only thirteen simple categories, distinguishable by features of topography, drainage, vegetation (timber) and observable soil conditions, which could have been recognized by a careful observer in 1829. These categories, as entered by numbers 1 to 13, on these reconstructed maps, provide a generalized morphologic and physiographic characterization of the soils and terrain of Areas 147 and 148, such as would have been recognized by a "pioneer's eye-view" of the land in 1829. The significance of each of the thirteen categories, appearing as a coded number on the maps, is as follows:

Category 1 — Dominantly upland soils, developed under prairie grass vegetation, on gently sloping topography.²² These soils have dark-colored, generally

¹⁹ Lee, Judson Fiske, April 1917 — Transportation — A Factor in the Development of Northern Illinois Previous to 1860. Illinois State Historical Society Journal, V. 10, No. 1, p. 25.

²⁰ Kinzie, Juliette, 1932 — Wau-Bun: The Early Day in the North-West. Chicago, R. R. Donnelley, pp. 160f.

²¹ See Chapter 13.

²² Percentage of slope, to be associated with the various descriptions, is as follows: gently sloping, 0.5 to 3.5; moderately sloping, 3.5 to 7.0; rolling or strongly sloping, 7.0 to 15.0; steep, over 15.

medium-textured (silt loam) surfaces, with moderately permeable subsoils.²³ Erosion is usually not a serious hazard, and to the pioneer of 1829, this land should have appeared as a "sea of waving grass," often as high as the backs of the horses and oxen, permitting easy travel for wagons across these areas.

Category 2 — Dominantly upland prairie and some prairie-forest transition soils on gently sloping topography. Dark-colored silt loam surfaces predominate with somewhat heavier subsoils than soils of Category 1. These subsoils are somewhat less permeable, (moderately slow to slow), to water and roots than subsoils of Category 1. This land was largely under grass vegetation, with occasional trees, and provided easy travel for wagons.

Category 3 — Dominantly upland prairie soils on undulating to strongly rolling topography. Generally dark-colored surfaces, thinner than those in Category 1, and having subsoils that generally range from moderate to moderately slow in permeability. Erosion is a problem on these soils because of the slope and/or the slow permeability of the subsoils. This land was covered with a fair to good grass cover or by occasional trees. The dark-colored surface is thinner than that of soils in Category 1. Generally easy travel for wagons along ridge lines but not transverse to the ridge lines.

Category 4 — Dominantly upland prairie soils under level to depressional topography. Dark-colored heavy silt loam and silty clay loam surfaces with moderately permeable subsoils predominating. These soils require artificial drainage. To the pioneers of 1829, the vegetative cover should have appeared as slough grasses and sedges. Large shallow ponds were prevalent over the areas, probably attracting a large waterfowl population; such areas were generally uncrossable by wagons.

Category 5 — Dominantly upland soils developed under timber vegetation on gently sloping topography. Light-colored silt loam surfaces with moderate to slowly permeable subsoils dominate. Erosion is a moderate hazard when these soils are cultivated. This land was largely under deciduous hardwood forest, chiefly oak, beech, and maple. There were small ponded areas on level topography, and in general, the quality of timber in 1829 should have been very good with the cleared land being fairly easy to plow.

Category 6 — Dominantly upland soils developed under timber vegetation on rolling and steep topography. Light-colored silt loam surfaces with moderate to slowly permeable subsoils dominate. Erosion is often a serious hazard on these soils when cultivated. This land was largely under deciduous hardwood forest of desirable species, such as those mentioned under Category 5. The cleared land would have been more difficult to cultivate because of the increasing slope as compared to soil areas of Category 5.

Category 7 — Dominantly terrace, or second bottom, soils developed under grass and/or timber vegetation. Dark and light-colored silt loam surfaces with moderately permeable subsoils dominate. The majority of these soils require artificial drainage. These soils were under grass, forest, and mixed grass-forest vegetation; large, shallow ponds were prevalent. The presence of desirable timber species on portions of these soils, in some instances, would have to be evaluated with consideration for the drainage requirements of the cleared land.

Category 8 — Dominantly bottom-land soils developed under mixed grass-forest vegetation. Dark and medium colored sandy loam to clay-textured surfaces are generally underlain with mixed, neutral (non - acid), waterlaid materials. These soil areas were intermittently covered with slough grass, swamp cottonwood (largely), and willows. They were subject to frequent overflow, perhaps about every second year.

Category 9 — Dominantly sandy soils developed on outwash, terrace and wind-sorted sandy loams and sands, with gently sloping to strongly sloping topography. Dark to light colored surfaces with moderate to excessively permeable subsoils dominate; drouthiness and wind erosion are major problems. These soil areas were largely covered with dry prairie, chiefly dropseed, lovegrasses or scattered deciduous hardwood trees, and were frequently sparsely vegetated.

Category 10 — Similar to soils in Category 9 but occurring on level to very gently sloping topography; artificial drainage generally needed. These soils appeared largely in wet prairies, supporting chiefly sedges and slough grasses; many of the areas were seriously ponded.

²³ The term permeability is used to describe the ease with which water moves into or through the soil. Moderate permeability describes the most desirable condition in which tile, if needed, draws well. The various classes of permeability may be associated with the rate of penetration of water. For example, under a one - inch head, the rates of water penetration into moist soils are, as follows:

Permeability class	Inches per hour
Slow	.05 — 0.2
Moderately slow	0.2 — 0.8
Moderate	0.8 — 2.5
Moderately rapid	2.5 — 5.0
Rapid	5.0 — 10.0

GENERAL DESCRIPTION OF THE SUBJECT AREAS

Category 11 — Dominantly peat and muck areas on depressional topography. These soil areas appeared as ponded depressions supporting chiefly rushes, reeds, sedges, and other shallow water plants and were uncrossable at all times.

Category 12 — Principal among the areas, included in this category, are inland bodies of water of mapable size, such as rivers and persisting lakes. Some areas of large gravel-pit or mining operations which obscured delineation of the original soil types are in this category.

In Joe Daviess County, Illinois and LaFayette County, Wisconsin, Category 12 was used for rough, stony land and an additional Category No. 13, for water. In Ogle County a small area of limestone outcrop, in Rock Island County two small swamp areas, and in Whiteside County several small areas of rock outcrop were also indicated by No. 13.²⁴

The maps at the end of this chapter show the location and extent of each of these thirteen categories of land, as they most probably existed in 1829. Categories 5 and 6, indicated, as covered with deciduous hardwood timber, appear on these maps in green.

Original Land Surveys of Areas 147 and 148

The lands in the subject areas were first surveyed by U.S. surveyors between 1821 and 1854. These surveyors noted on their surveys the extent of the existing timber, rivers, streams, swamps and other characteristics of each section in each township and, for the purposes of this study, this information, as shown on these original surveys, is also entered on the reconstructed soil maps which appear at the end of this chapter. Such information is shown on these maps in red. As a result these maps show, in three colors, the extent of the timber, soil fertility and drainage as of 1829 for every section or fractional section of land located in Areas 147 and 148.

Boundaries of Areas 147 and 148

No difficulty was encountered in establishing the

limits of the subject areas where they were bounded by rivers or lines of survey. Areas of over or undersized or fractional sections were established from notations on the original government surveys. However the west line of Area 148 and the east line of Area 147, cut through and divide established sections as surveyed.

The eastern boundary of Area 147 was one of great sinuosity.²⁵ The exact location of this boundary was calculated by the Bureau of Land Management, of the United States Department of Interior, and was marked by them on copies of the original township survey maps, showing the acreage of all fractional sections falling within the cession (west of the east boundary line). The northern boundary line of Area 148, likewise, cuts into established townships and sections, and, although straight, leaves fractional sections within the cession. The location of this northerly border was also plotted and the acreage of fractional sections falling within the cession calculated, by the U.S. Department of Interior, on original township survey maps. Figures 1-1 and 1-2 are typical examples of the location of such boundary lines and of the acreages, of the divided sections, remaining within the subject areas as estimated and noted by the United States Department of Interior.

Quantity of Land by Classifications

A careful examination of the reconstructed soil maps, at the end of this chapter, revealed the percentage of each of the thirteen established land categories in each and everyone of the 6365 survey sections, comprising entire Areas 147 and 148. Transfer of this information to tabulating cards and tabulation sheets permitted a division of the total acreage in the subject areas, into significant groups of relative desirability and value as follows:²⁶

Class One Sections — Those indicated as having 35% of their area, or more, covered with deciduous hardwood timber, and also containing some well - drained prairie soil.²⁷

²⁴ These categories were created by the writer with the assistance of Dr. Richard H. Rust, formerly of the University of Illinois in the Dept. of Soils and now with the University of Minnesota, in the same department.

²⁵ Described as: Beginning at the Winnebago village, on Rock river, 40 miles from its mouth, and running thence down Rock river to a line which runs due west from the most southern bend of Lake Michigan to the Mississippi River, and with that line to the Mississippi River opposite to Rock Island; thence up that river to the United States reservation at the mouth of the Ouisconsin; thence with south and east lines of said reservation to the Ouisconsin river, then southerly passing the heads of the small streams emptying into the Mississippi, to the Rock river aforesaid at the Winnebago village, the place of beginning (From Article I of the Treaty of July 29, 1829.

²⁶ The pertinent information about each surveyed section (640 acres — more or less) was transferred to key-punched cards and automatically listed, classified and totaled by International Business Machines automatic tabulating system, under the direction of the writer, for the entire acreage of the Areas 147 and 148

²⁷ The even sweep of the timber lines on the surveyors' plats indicates quite a bit of generalization. Accordingly, the timber line indicated by timber soil, on the reconstructed soil maps, is probably the more exact indication of timber cover. However, as timber soils and the lines on the original township by the surveyors' timber sometimes varied in exact extent, the largest extent of either indication was assumed to be timber in computing the percentage of timber cover.

APPRAISAL OF ROYCE AREAS 147 AND 148

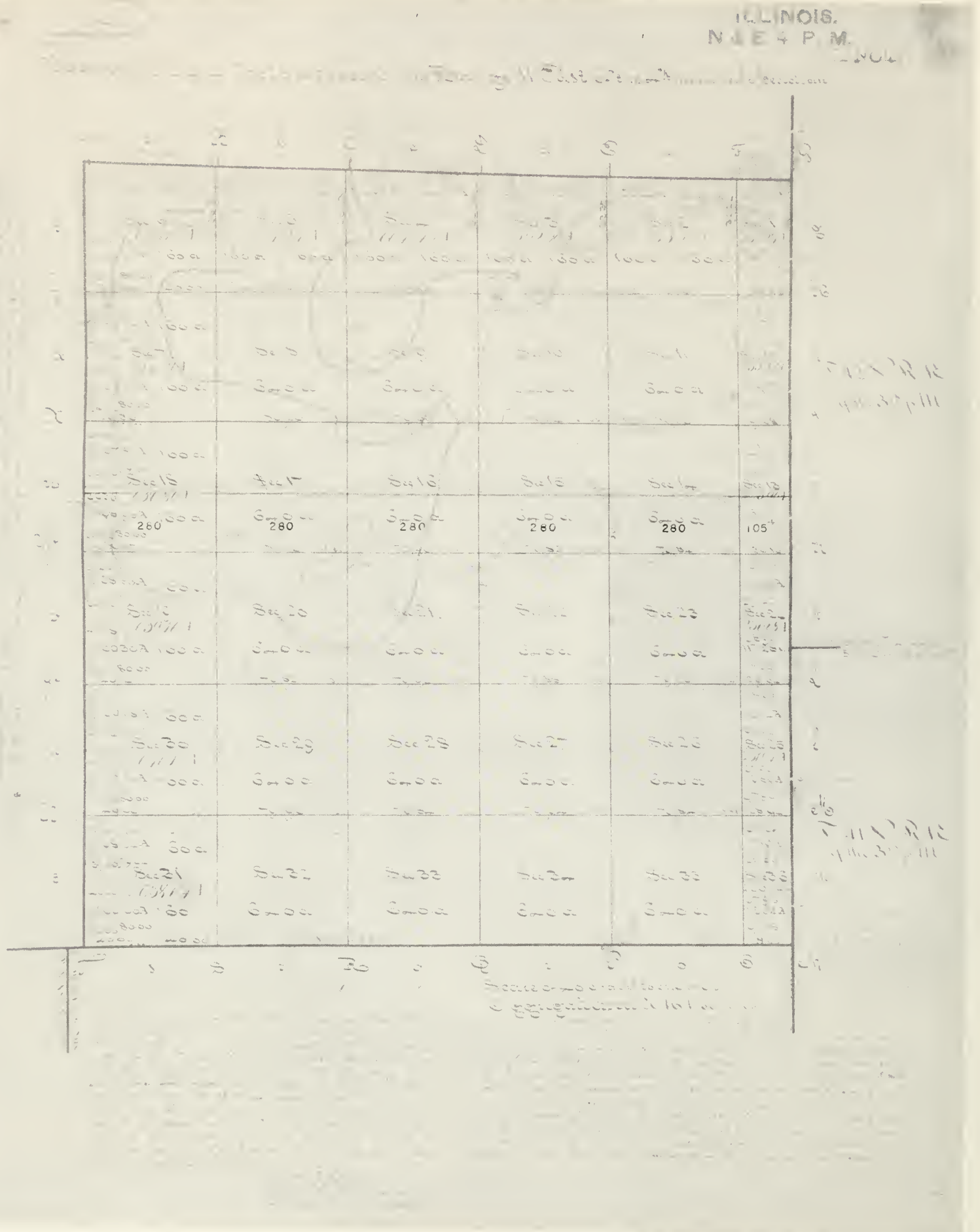


FIGURE 1-1 Example of the Original Township Survey Maps on Which the Northern Boundary of Area 148 and the Acreage in the Fractional Sections, Remaining within the Area, Were Located and Computed by the U. S. Department of Interior. Note Boundary Line and Acreages Remaining within Subject Area as Shown in Sections 13 to 18, Inclusive.

GENERAL DESCRIPTION OF THE SUBJECT AREAS

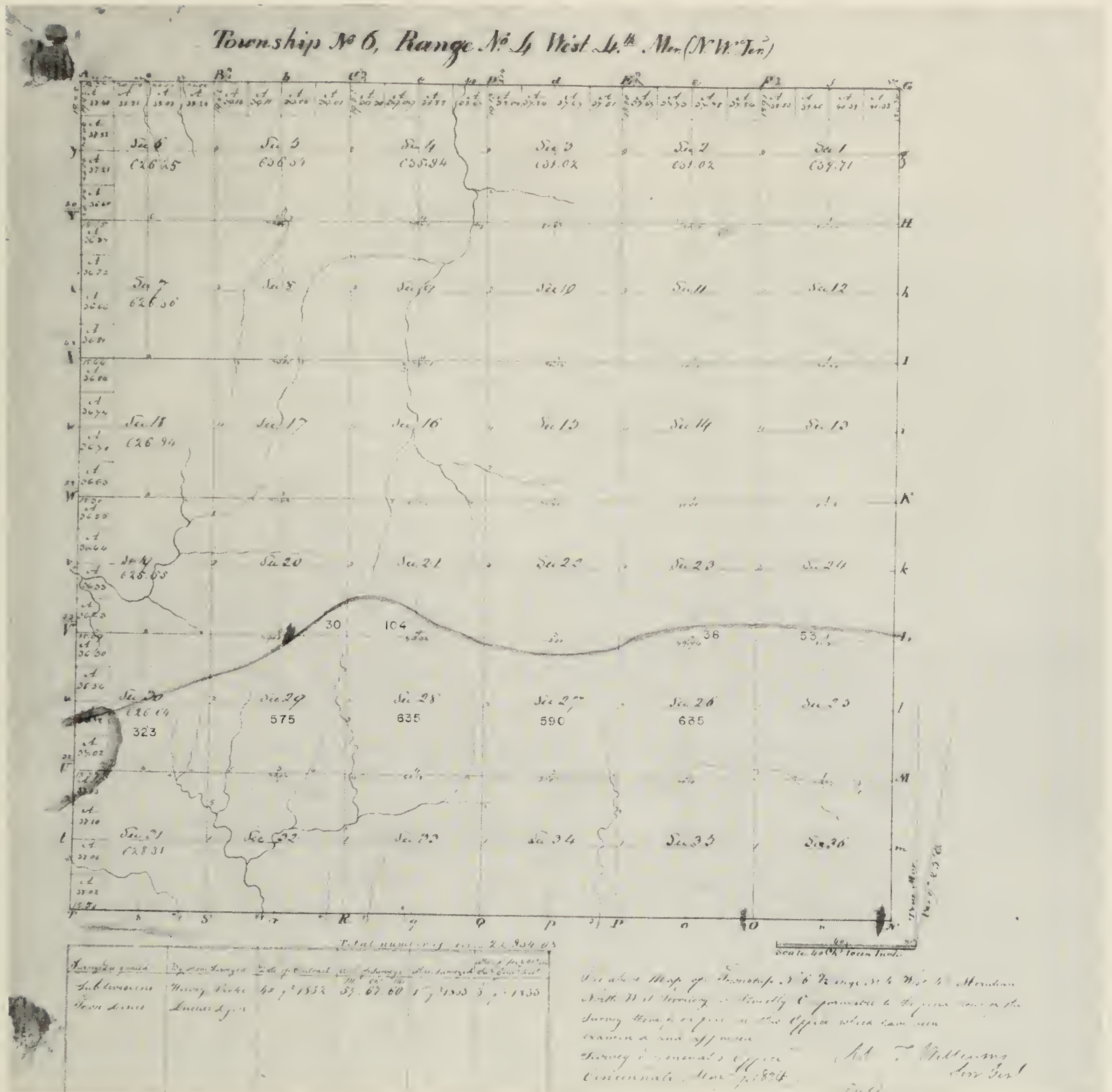


FIGURE 1-2 Example of the Original Township Survey Maps, on Which the Eastern Boundary of Area 147 and the Acreage in the Fractional Sections, Remaining within the Area, Were Located and Computed by the U. S. Department of Interior. Note Boundary Line and Acreages Remaining, as the Sinuous Boundary Winds Through Sections 30, 29, 20, 21, 28, 27, 26, 23 and 24.

APPRAISAL OF ROYCE AREAS 147 AND 148

Class Two Sections — All other sections indicated as having at least 5% deciduous hardwood timber cover, regardless of the soil category of the remaining non-timbered area.

Class Three Sections — Prairie sections without timber, regardless of the soil category.

The estimated total acreage in each of the above three classes of sections, in the various portions of Areas 147 and 148, is shown in Table 1-A.

Summary

Areas 147 and 148 included 3,689,589 acres of land: 144,000 random acres of Area 147 belonged, by reservation, to the United States by the Treaty of August 24, 1816, and 16,640 acres in Areas 147 and 148 were reserved for individual Indians by the Treaty of July 29, 1829. Although the northern portion of Area 147 was part of a known lead area, the reservation of 144,000

acres was far more than sufficient to include all of the valuable lead lands. With the exception of the lead region, with a floating population of some 3,000 miners, and some settlements up to a few hundred people each, most of northern Illinois, in which the subject Areas 147 and 148 were located, was an uninhabited and uncharted wilderness. Little was known of most of these areas until after the Black Hawk War, in 1832

Reconstructed Illinois and Wisconsin soil maps and the original U.S. surveys, made from 1821 to 1854, are used as a basis of classifying the land into three classes of desirability, reflecting an 1829 "pioneer's eye view." Table 1-A shows the total number of acres in each of these three classes. Undoubtedly a prospective purchaser would have informed himself as to the quantity and quality of the subject lands, in terms of such classes of settler preference, in order to estimate the probable rate of sale at which the subject lands might be resold at retail to settlers.

GENERAL DESCRIPTION OF THE SUBJECT AREAS

Table 1 - A

AREAS 147 - 148

Summary of Total Acreage by Classes *

	Class One Sections Acres	Class Two Sections Acres	Class Three Sections Acres	Total Acres
Area 147 — In Wisconsin				
A**	146,181	418,054	47,354	611,589
B***	—	3,200	—	3,200
Total	146,181	421,254	47,354	614,789
Area 147 — In Illinois				
A**	123,485	555,764	224,421	903,670
B***	145	1,480	6,982	8,607
Total	123,630	557,244	231,403	912,277
Area 148B — West of Fox River				
A**	179,986	221,434	1,148,907	1,550,327
B***	6,693	10,641	84,849	102,183
Total	186,679	232,075	1,233,956	1,652,510
Area 148A — East of Fox River				
A**	85,498	136,294	270,760	492,552
B***	1,227	2,672	13,562	17,461
Total	86,725	138,966	284,322	510,013
Total Areas 147 and 148B				
A**	449,652	1,195,252	1,420,682	3,065,586
B***	6,838	15,321	91,831	113,990
Total	456,490	1,210,573	1,512,513	3,179,576
Total Areas 147 and 148				
A**	535,150	1,331,546	1,691,442	3,558,138
B***	8,065	17,993	105,393	131,451
Grand Total	543,215	1,349,539	1,796,835	3,689,589

* Areas shown for Area 147 are before deduction of 144,000 random acres reserved by the U.S. and for Areas 147 and 148 are before deduction of 16,640 acres reserved for individual Indians.

** Class 1 and Class 2 sections — Timber, indicated by timber soil, or in adjacent areas where presence of timber was indicated on the original surveys, as shown by the reconstructed soil maps. Class 3 sections — Prairie sections, with no timber soil, and no indication of timber on original surveys.

*** Class 1 and Class 2 sections — No timber soil but timber indicated on original survey.

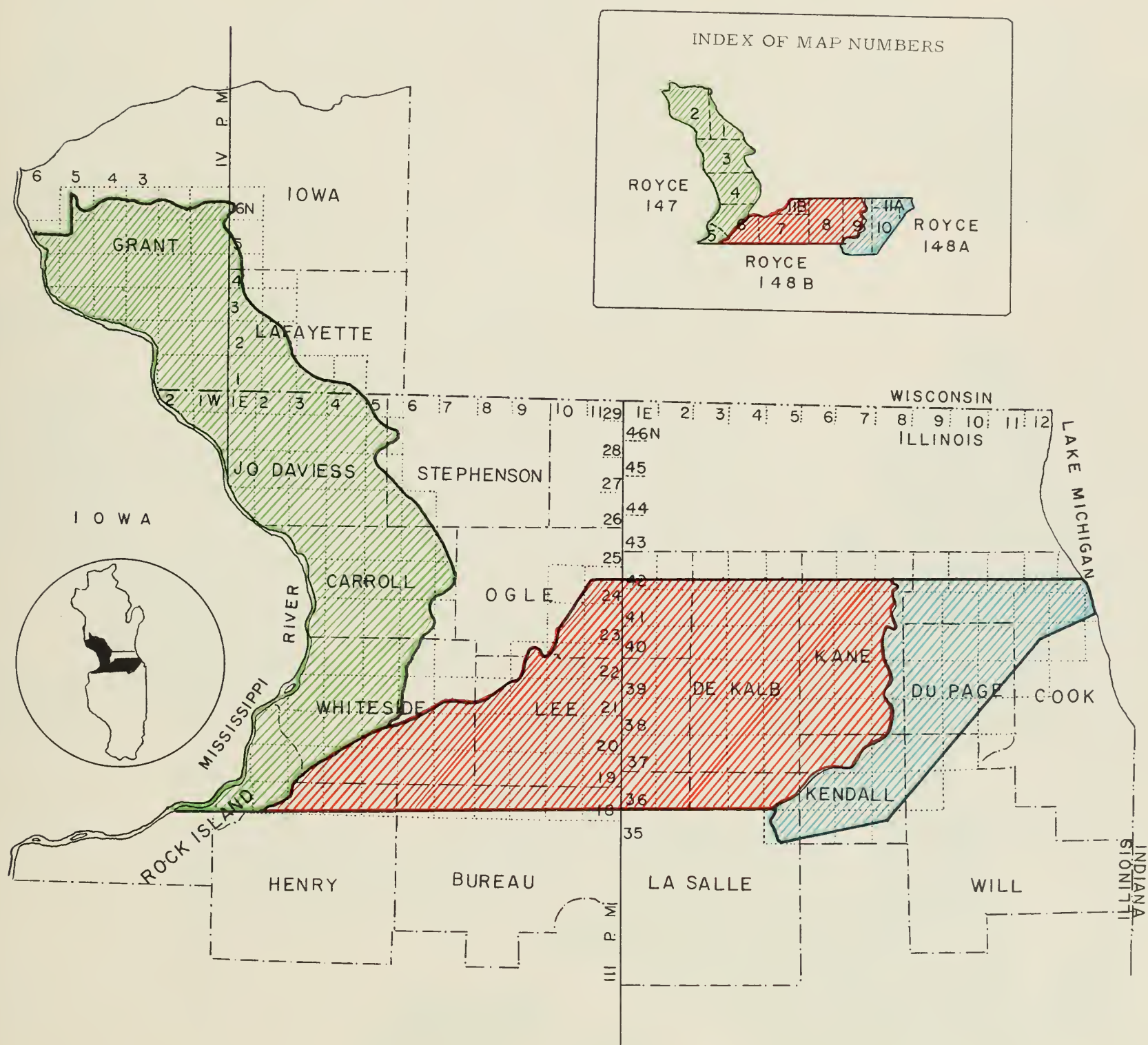
In some instances, the original surveyors indicated the presence of timber on a section of land, whereas the reconstructed soil maps on the following pages indicate it to be remote from timber soil. Such "surveyor's timber" sections are separately classified above. Those in which the timber is indicated, as located on soil categories 1, 2 or 3, are tabulated as Class 1 or Class 2 sections. Those on other soil categories (4 to 13) are tabulated as Class 3 sections.

Walter R. Kuehnle — 1958

**MAPS OF SUBJECT AREAS 147, 148A AND 148B SHOWING SOIL,
TIMBER AND TOPOGRAPHICAL CHARACTERISTICS**

SUBJECT ROYCE AREAS 147-148*

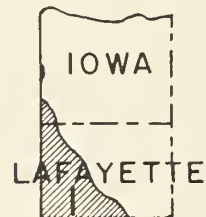
SHOWING PRESENT COUNTY LINES AND MAP NUMBERS







* ROYCE 148 DIVIDED INTO TWO PARTS-148 A EAST OF FOX RIVER-148 B WEST OF FOX RIVER

SOIL MAP NO. 2-1
ROYCE AREA 147
IN WISCONSIN


IOWA AND LAFAYETTE COUNTIES



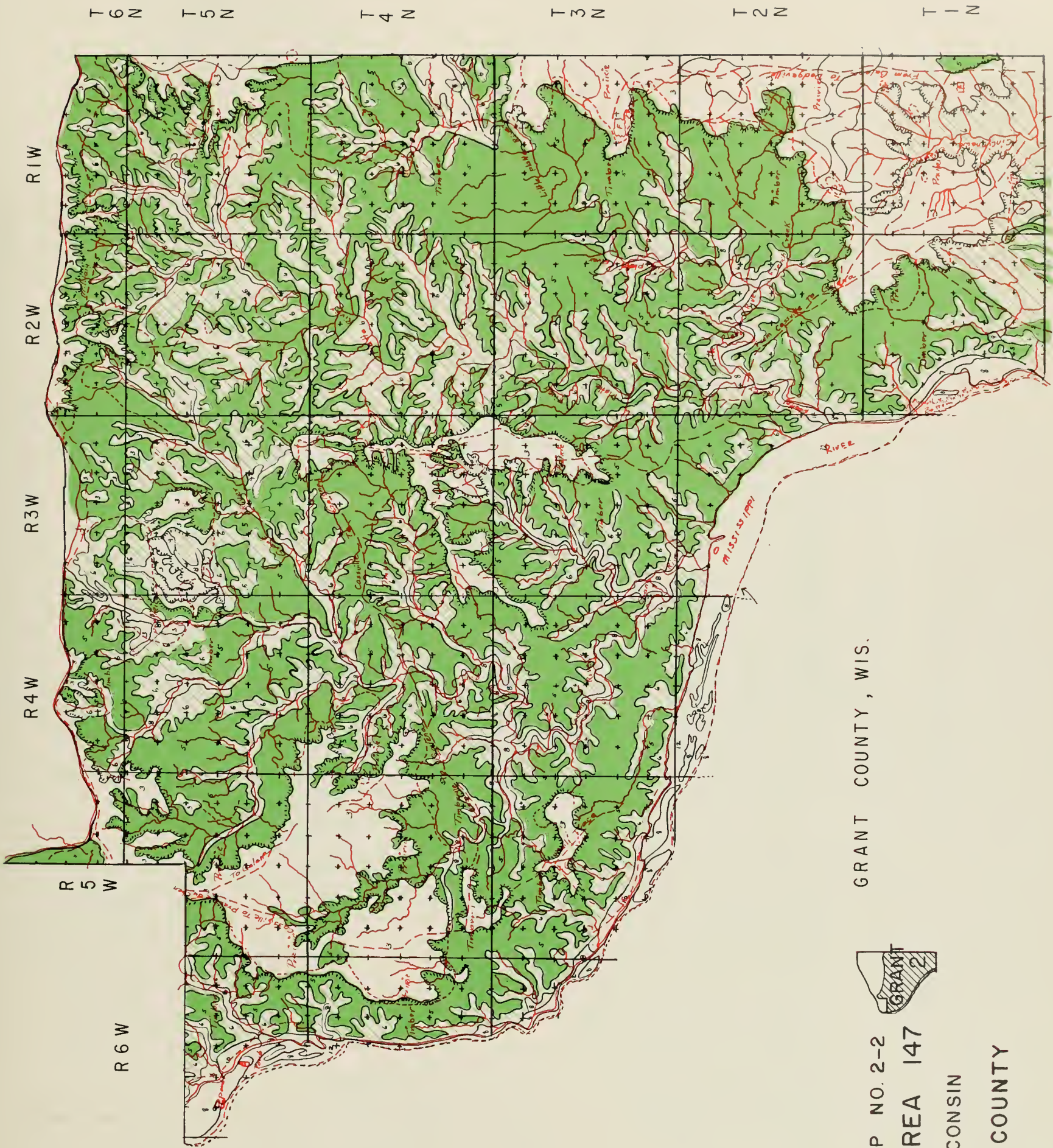
CODE

-  SOIL CLASSIFICATION
AS DEFINED IN CHAPTER 2
-  TIMBER SOILS
-  TIMBER LINES AS
SHOWN ON ORIGINAL LAND
SURVEYS
-  RIVERS, CREEKS
OR STREAMS AS SHOWN ON
ORIGINAL LAND SURVEYS

NOTE—ADDITIONAL CODE

-  INDICATES TRAILS AND ROADS
ON THE FOLLOWING MAPS
(2-1 TO 2-11B INCLUSIVE)





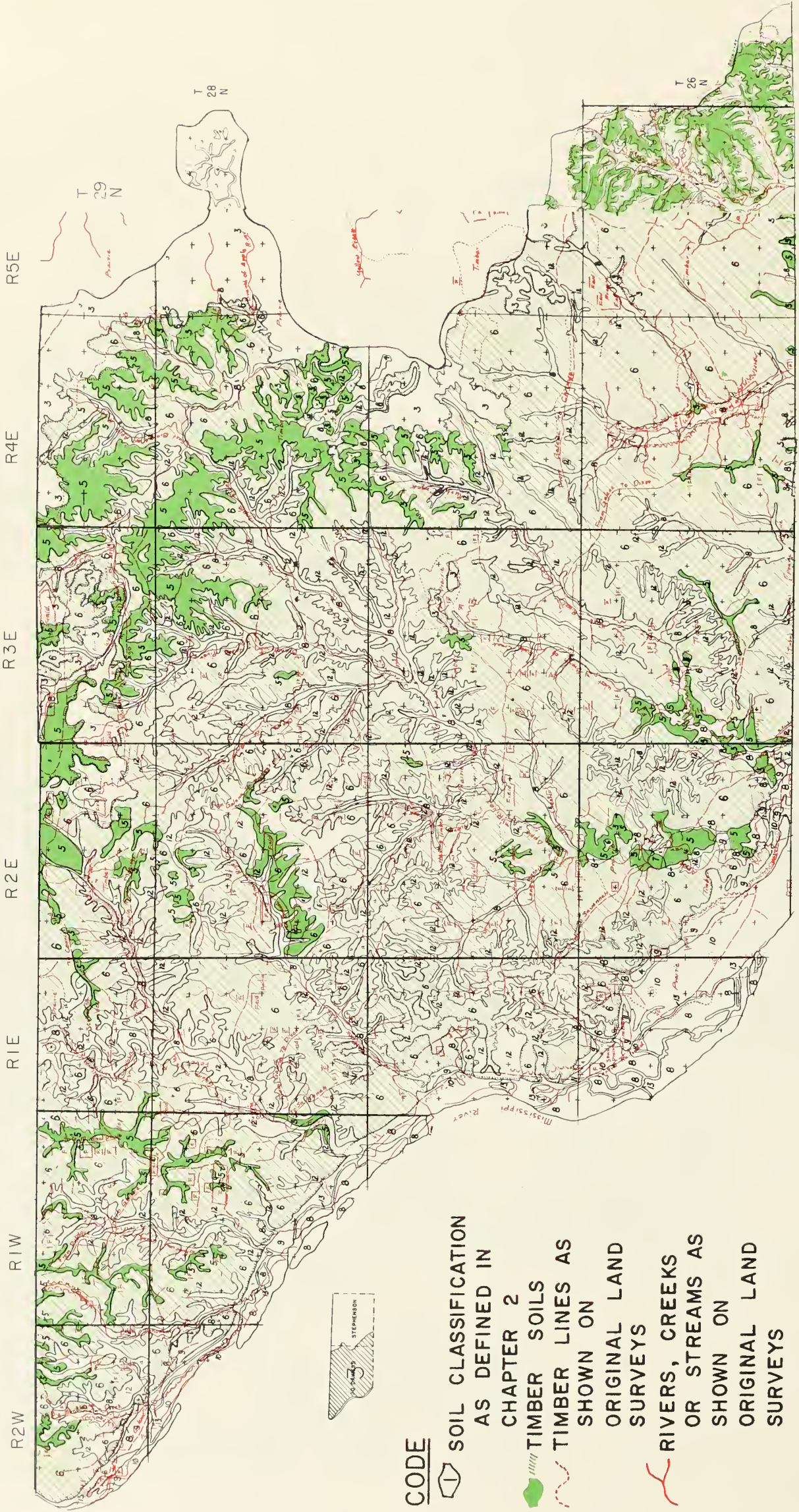
GRANT COUNTY, WIS.

SOIL MAP NO. 2-2
 ROYCE AREA 147
 IN WISCONSIN
 GRANT COUNTY

ROYCE AREA 147

IN ILLINOIS

JO DAVIESS AND STEPHENSON COUNTIES



CODE

① SOIL CLASSIFICATION
AS DEFINED IN

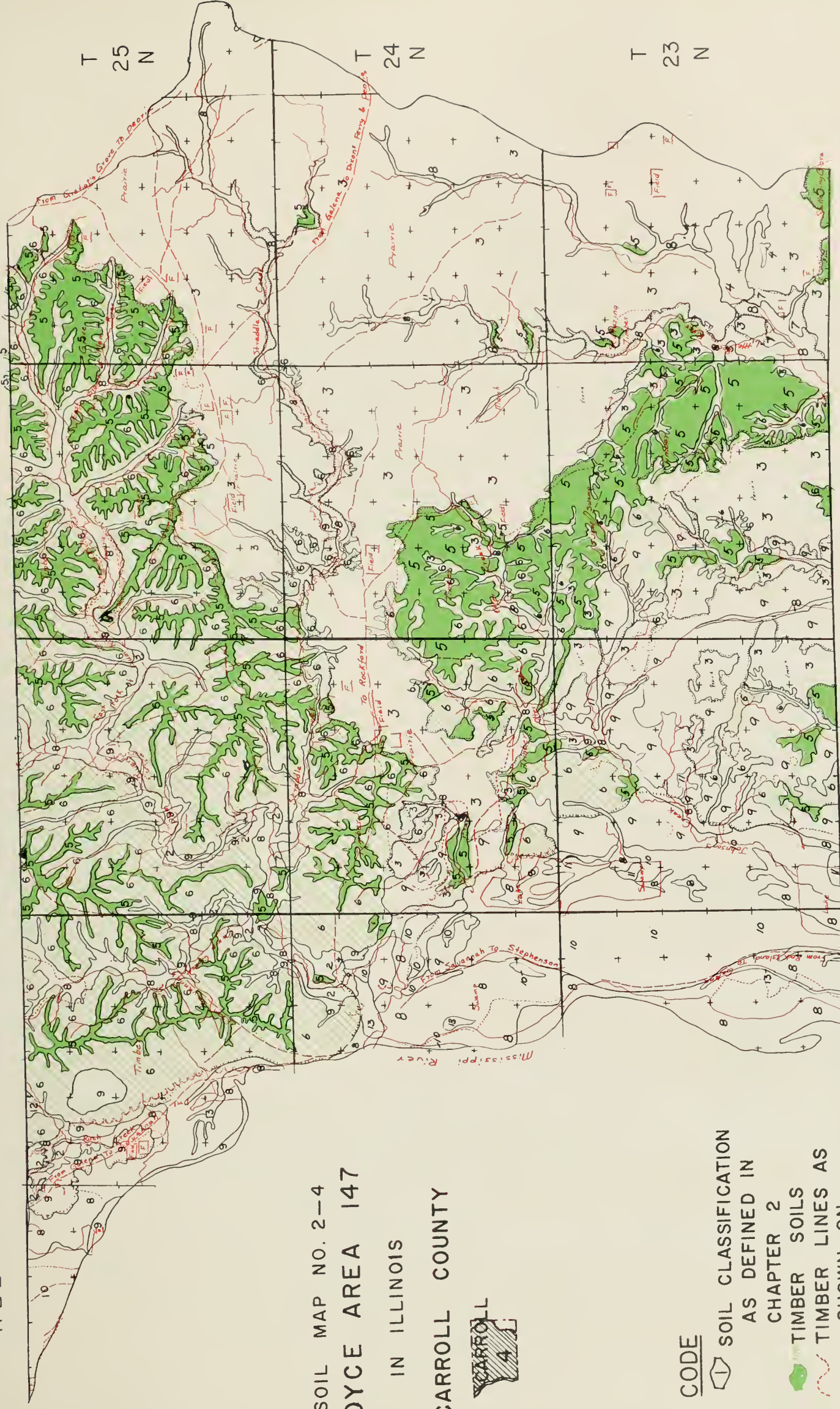
CHAPTER 2

TIMBER SOILS

TIMBER LINES AS
SHOWN ON

ORIGINAL LAND
SURVEYS

RIVERS, CREEKS
OR STREAMS AS
SHOWN ON
ORIGINAL LAND
SURVEYS




SOIL MAP NO. 2-4
ROYCE AREA 147

IN ILLINOIS

21 CARROLL COUNTY



CODE



SOIL CLASSIFICATION
AS DEFINED IN
CHAPTER 2

TIMBER SOILS

TIMBER LINES AS SHOWN ON

ORIGINAL LAND SURVEYS

RIVERS, CREEKS
OR STREAMS AS
SHOWN ON

ORIGINAL LAND SURVEYS

SOIL MAP NO. 2-5
 ROYCE AREA 147
 IN ILLINOIS
 ROCK ISLAND COUNTY



CODE

1 SOIL CLASSIFICATION
 AS DEFINED IN CHAPTER 2

TIMBER SOILS

TIMBER LINES AS
 SHOWN ON ORIGINAL LAND
 SURVEYS

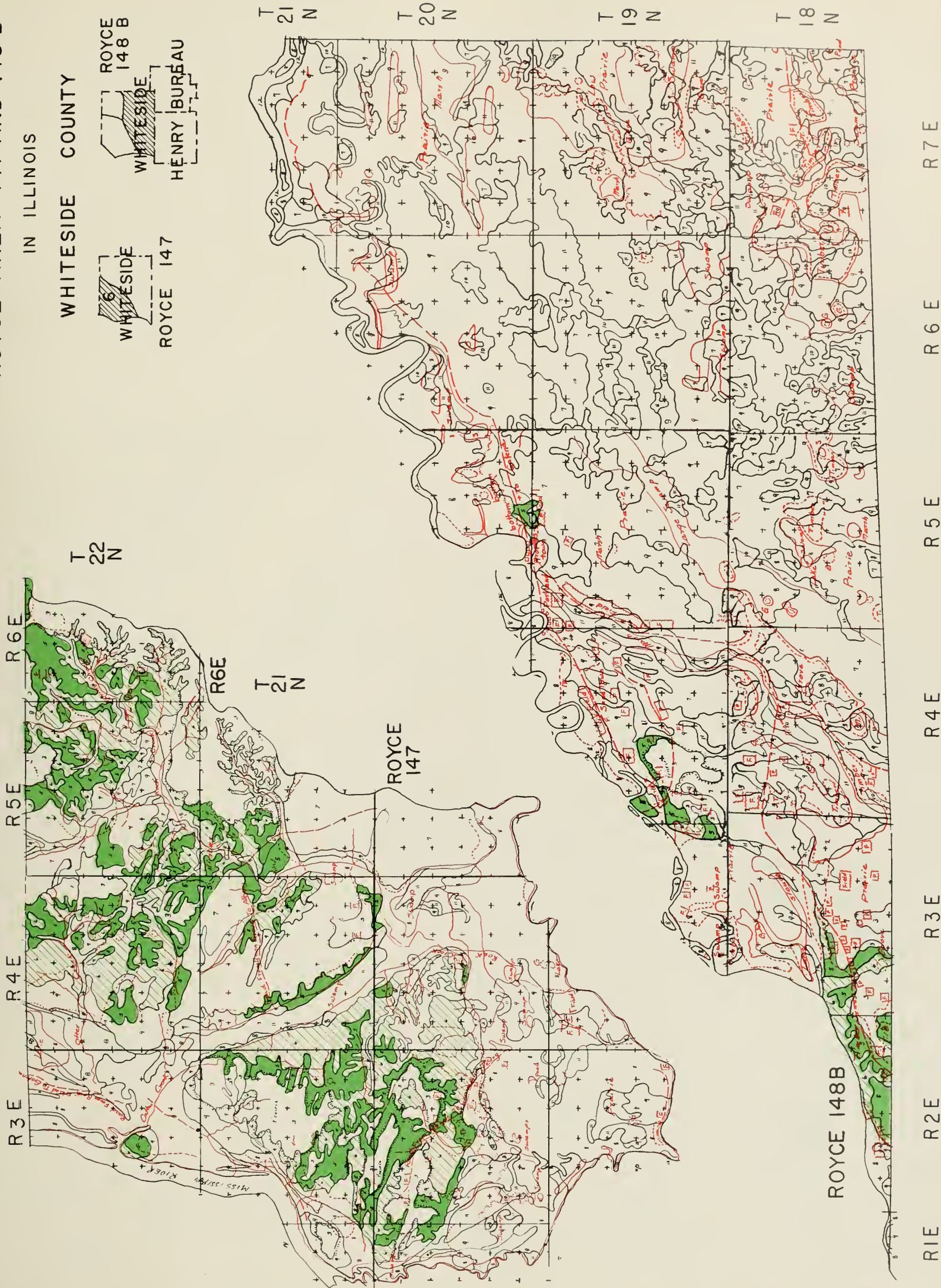
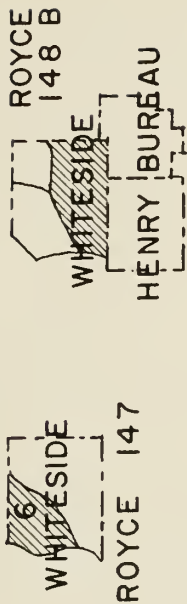
RIVERS, CREEKS
 OR STREAMS AS SHOWN ON
 ORIGINAL LAND SURVEYS



ROYCE AREA 147 AND 148 B

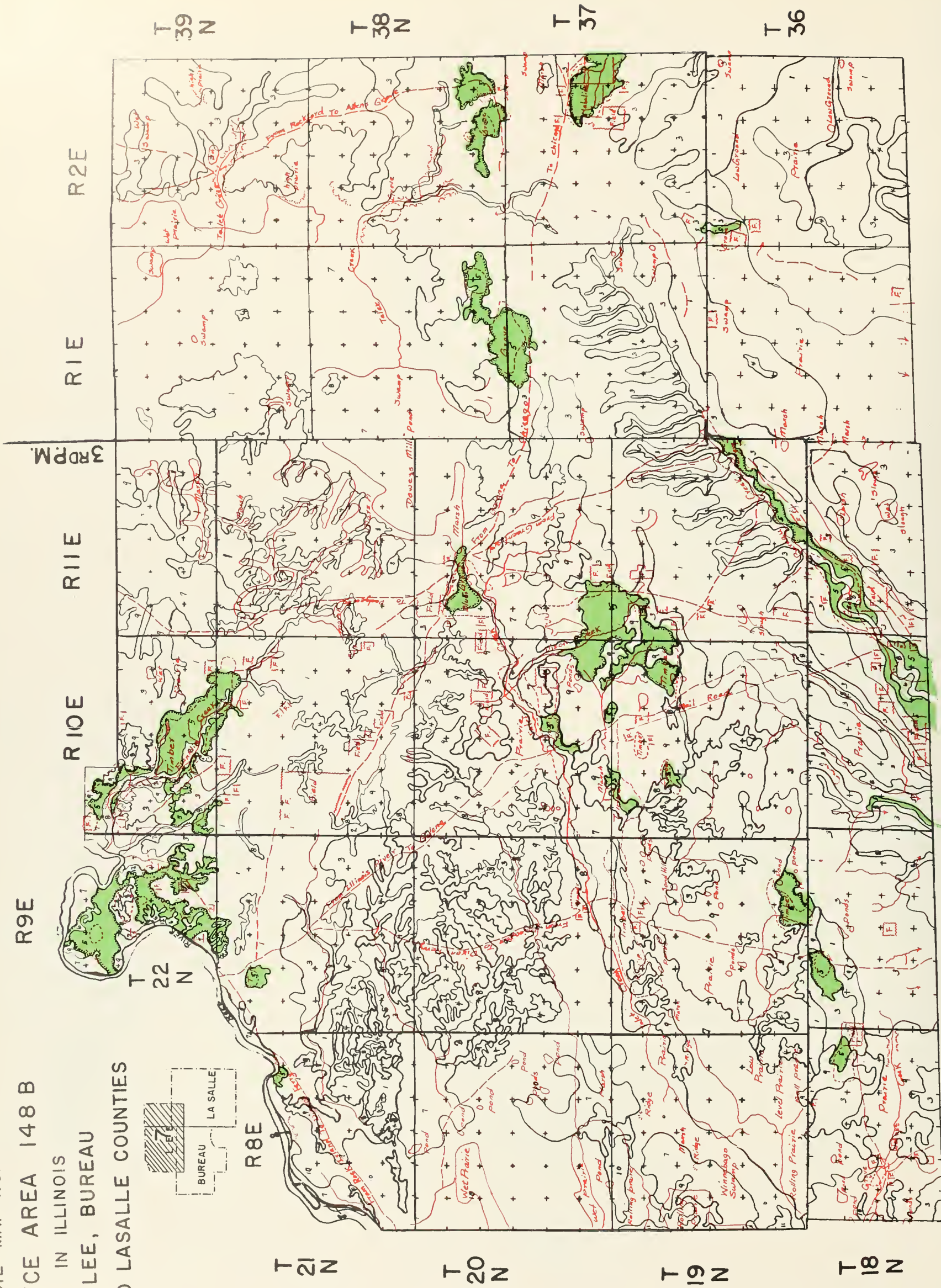
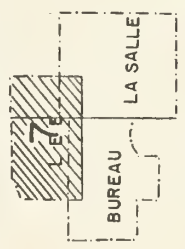
IN ILLINOIS

WHITESIDE COUNTY

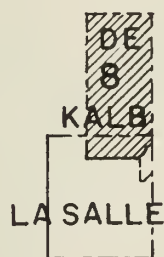


ROYCE AREA 148 B

IN ILLINOIS
LEE, BUREAU
AND LASALLE COUNTIES

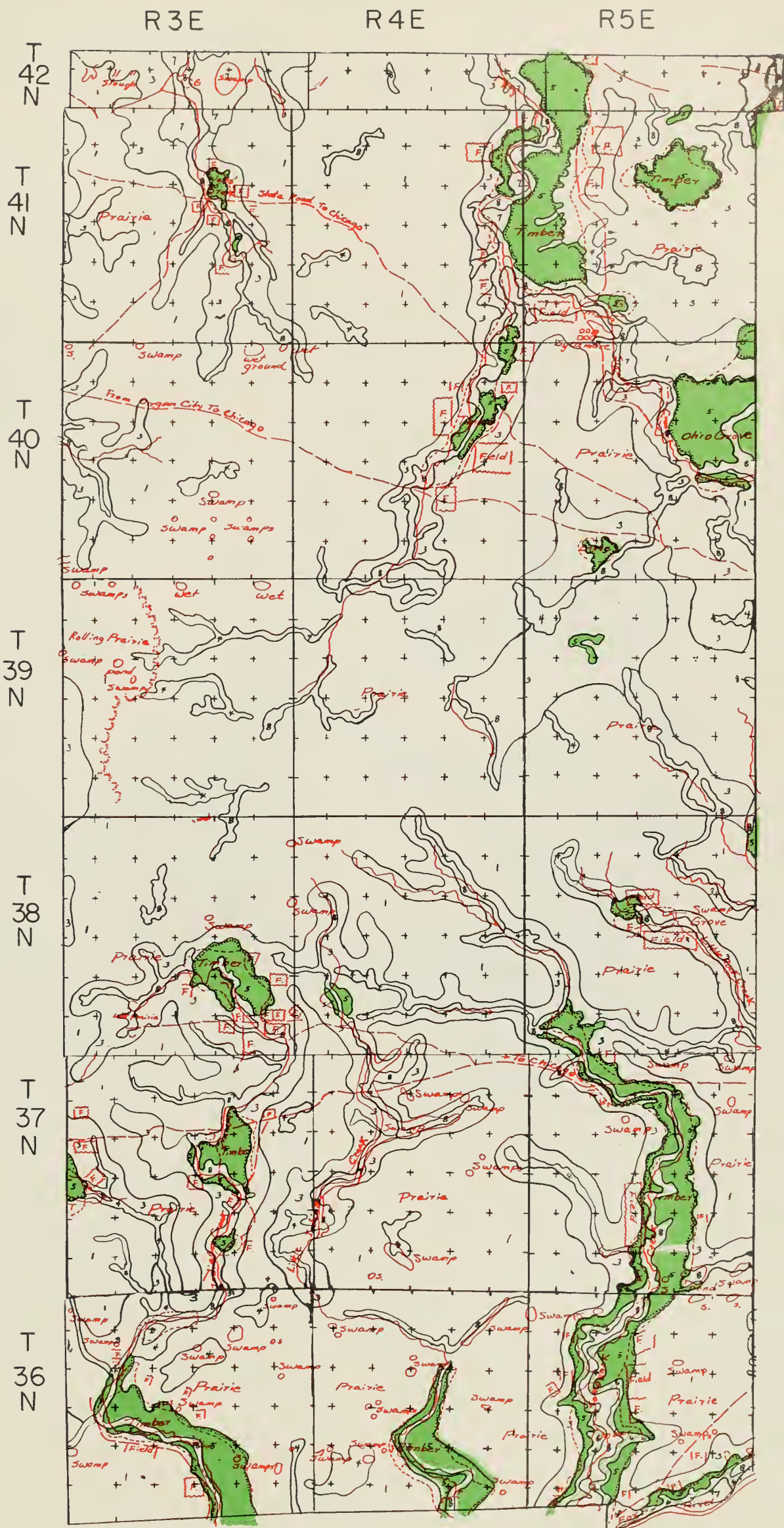


SOIL MAP NO. 2-8
ROYCE AREA 148 B
IN ILLINOIS
DE KALB AND
LASALLE COUNTIES

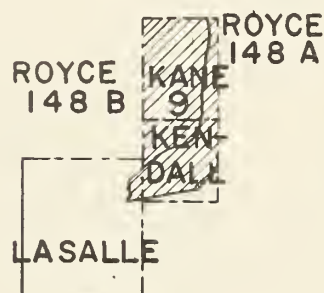


CODE

- SOIL CLASSIFICATION
AS DEFINED IN
CHAPTER 2
- TIMBER SOILS
- TIMBER LINES AS
SHOWN ON
ORIGINAL LAND
SURVEYS
- RIVERS, CREEKS
OR STREAMS AS
SHOWN ON
ORIGINAL LAND
SURVEYS



SOIL MAP NO. 2-9
ROYCE AREA
148 B AND 148 A
IN ILLINOIS
KANE, KENDALL
AND LASALLE COUNTIES



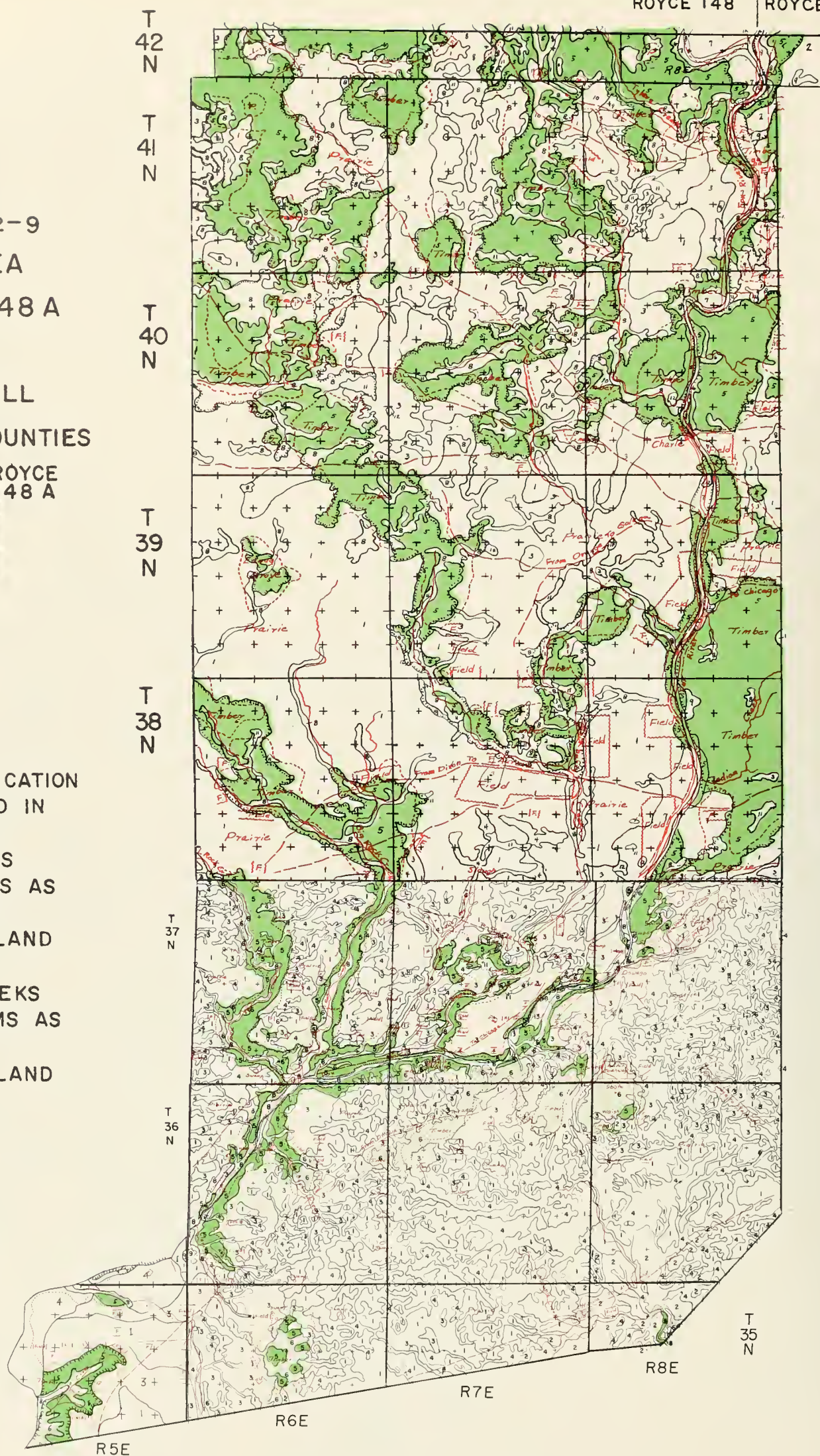
CODE

1 SOIL CLASSIFICATION
AS DEFINED IN
CHAPTER 2

TIMBER SOILS

TIMBER LINES AS
SHOWN ON
ORIGINAL LAND
SURVEYS

RIVERS, CREEKS
OR STREAMS AS
SHOWN ON
ORIGINAL LAND
SURVEYS



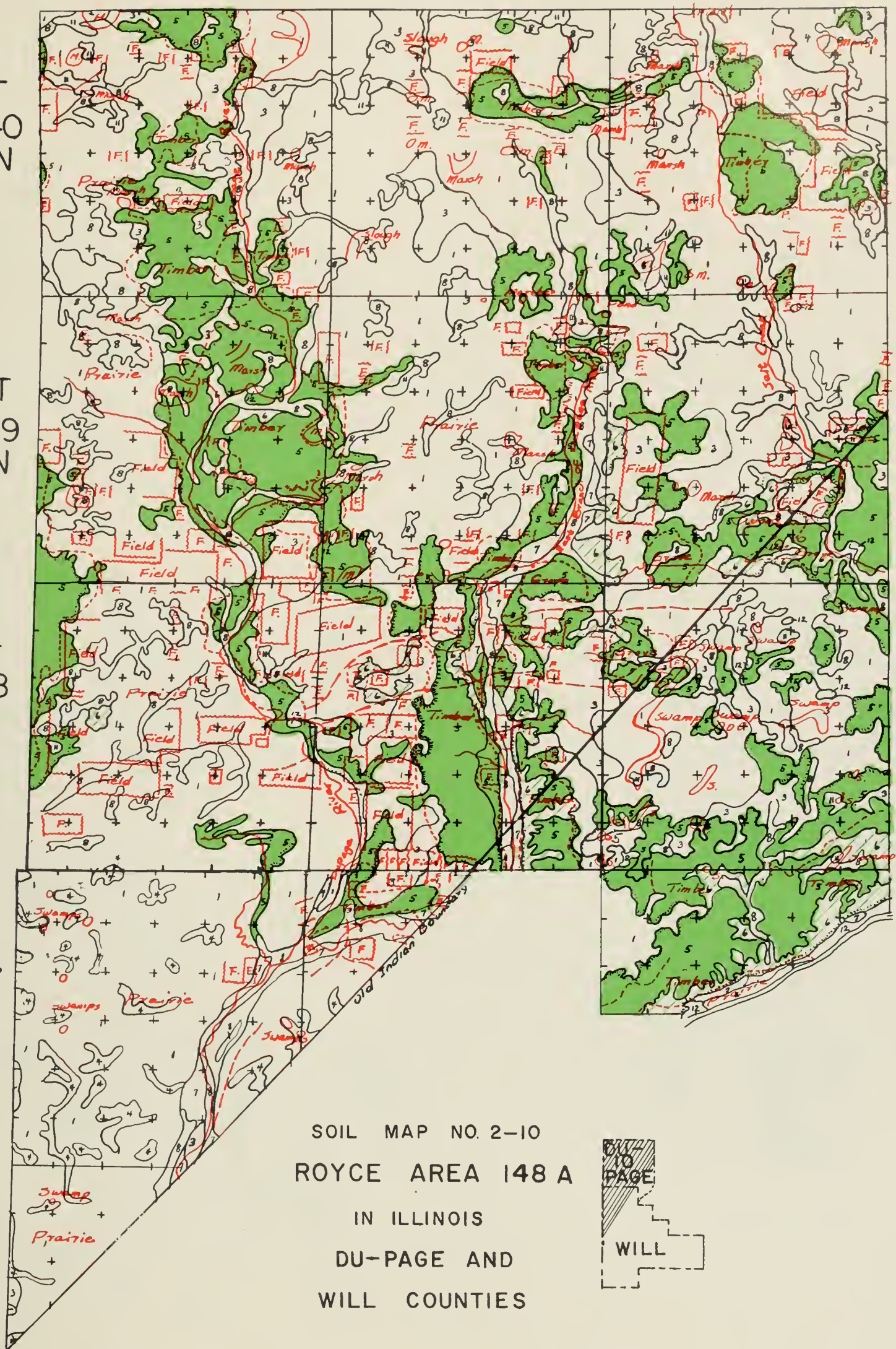
R9E

R 10E

R11E

T 40
NT 39
NT 38
N

T 37

T 36
N

SOIL MAP NO. 2-10

ROYCE AREA 148 A

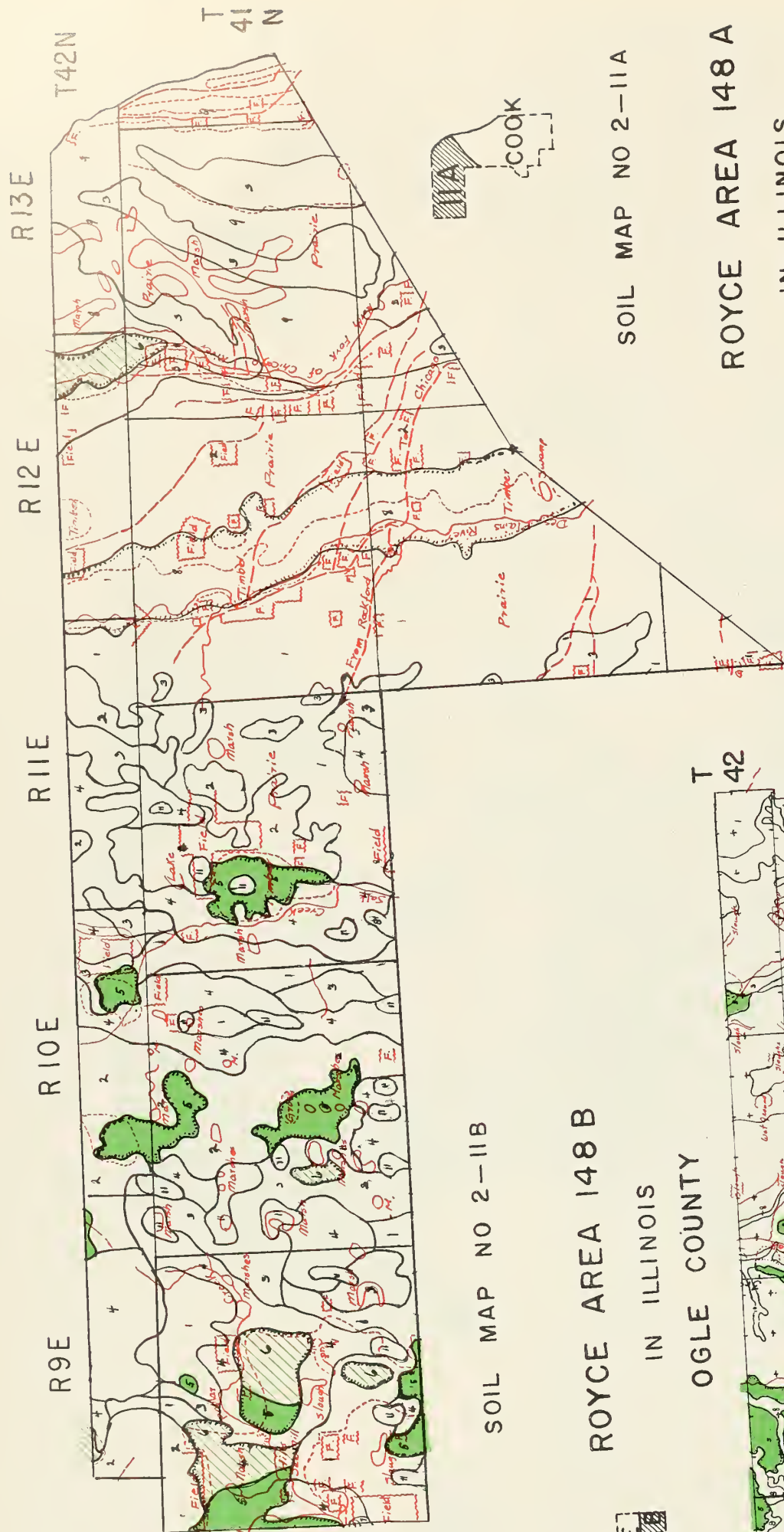
IN ILLINOIS

DU-PAGE AND

WILL COUNTIES

DU-10
PAGE

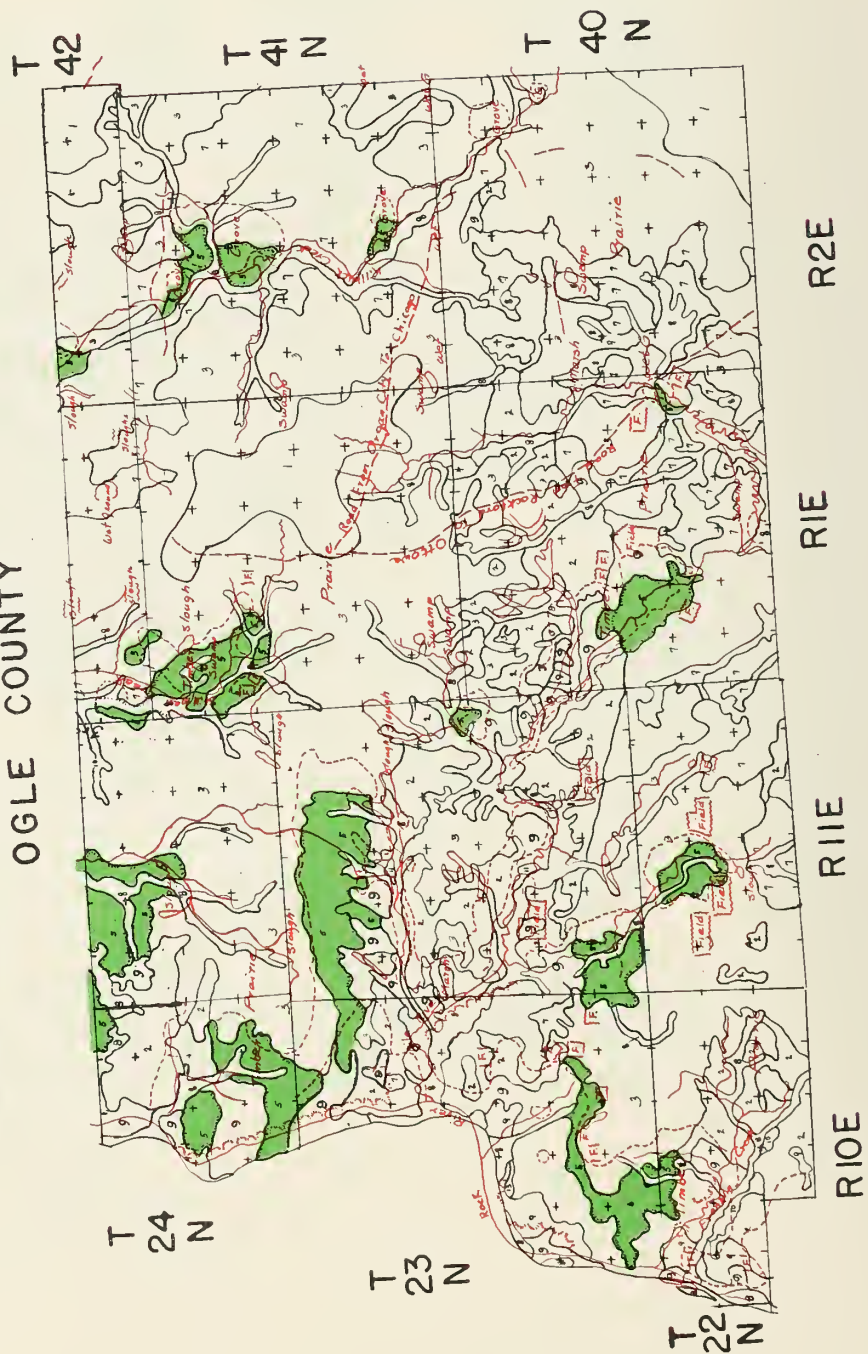
WILL



OGLE

SOIL MAP NO 2-11A

ROYCE AREA 148 A
IN ILLINOIS
COOK COUNTY



CODE



SOIL CLASSIFICATION
AS DEFINED IN CHAPTER 2



TIMBER SOILS



TIMBER LINES AS
SHOWN ON ORIGINAL LAND
SURVEYS



RIVERS, CREEKS
OR STREAMS AS SHOWN ON
ORIGINAL LAND SURVEYS

Chapter 2

ILLINOIS AGRICULTURE IN 1829

In the year 1829, the value of the lands in the subject area was primarily based on their potential for future settlement, as the existing frontier moved northward from the center of the State of Illinois. The character of the people settling the frontier, the use of the land which they acquired, the economics of their existence, their methods of farming and the farm equipment available for their use and the climatic and health conditions of the area, all influenced the potential value of the subject area for their future use. Accordingly, these factors have a place in this study and will be discussed in the following pages of this chapter.

Character of Settlers

In 1829, 91% of the people in the United States lived in rural areas. Farming was the chief occupation of the American people.¹ The mass of the population, however, were subsistence farmers and consumed most of what they produced. The character of the settlement of Illinois by subsistence farmers was settled in an exciting campaign, which lasted a year and a half, and culminated in the vote of February 1823, which decided against Illinois becoming a slave state, with the possible introduction of the plantation system as it existed in the South.²

Farming Methods

It was principally the primitive methods of farming of that early day that made the settler a subsistence farmer. Methods were very crude, i.e., corn being planted with a hoe, without much reference to systematic arrangement in rows for cultivation; in fact, not much cultivating was done. Where wheat was sown, it was generally sown among the corn in September, following which the ground was plowed lightly. It was largely harvested with a sickle unless a farmer had seen a cradle and made one for his own use, the methods of handling livestock were crude and careless. They were roughed through the winter in pastures and fenced out of cultivated spots, rather than being fenced in.³

Much of the land controlled by resident farm families was used in raising products for direct consumption by members of the household and for supplying feed to animals, kept for field uses and for off-farm transportation. Most of the land in farms was thus producing wild hay, native grasses, timothy, oats, barley, wheat, straw, corn for feeding, often without human harvest. Products derived from slaughtering domestic animals and from dressing wild fowl and game were used in the household and some of them exchanged with neighbors, or sometimes made available for others to acquire. Animals used for power were farm-bred and farm-sustained. Cows and oxen were slow as sources of power but, compared with horses and mules, had considerable practical use. Hides of both tame and wild animals were processed for use within the household group or for marketing at distant points. Milk, butterfat and products of slaughtering argued in favor of cows and, in less measure, oxen, as against horses and mules that were replacing them in part. The area required for livestock usage, that is for pastures and for producing hay and concentrates, seldom came to less than three-fourths of the area controlled by an Illinois farm family, until many years after it had been established. Surveyors, whose maps of Illinois land areas were made in the 1820's and later, show a few cultivated fields indicating squatters. The practices of these squatters, who were on the land prior to surveying, were not widely different from those of the first clear title farmers.

For the more direct provisioning of the farm family and for obtaining the farm family's supply of fiber, a varied, but never large, portion of the pioneer farm was used. Small patches of tobacco were cultivated by many; patches of flax and hemp were frequent. Sheep contributed mutton, tallow, and wool although sheep required closer guarding than swine, and did not produce in as fast ratio. Fibers were largely processed in the pioneer homes in the late 1820's and early 1830's. Some of the fiber stock were taken to small textile mills, which generally served wide

¹ In 1828, 77% of the exports of the United States were agricultural products.

² Brown, Wm. H., *Early Movement in Illinois for the Legislation of Slavery*. Fergus Historical Series No. 4.

³ Nelson, Peter, 1930 — *A History of Agricultural Illinois with special reference to types of farming*; thesis — Univ. of Ill., Champaign, Ill.

areas. Wheat for flour and corn for meal, largely for human consumption, found their limitations less in the problems of growing and harvesting than in the processing and marketing. Flour mills to which wheat and other small grains were taken, and grist mills for corn, were so lacking in number in Illinois, in the 1830's and before, that it was often necessary to haul the grain 60 miles more to be ground. Facilities for grinding were sometimes developed on individual farms and, in the absence of water power, were so crude as to be useful for human need only within narrow limits. A contemporary writer of the times said:

Mills were very scarce in the early days. I can remember my father going 60 miles to the mill. But then he took as much grain as 10 yoke of oxen could haul, and did not have to go again for six months.⁴

Accordingly, in 1829, the limited productivity of the individual depended on manual labor and crude equipment, the requirements of the produce of the land by the producer's family and farm animals, for fiber, fuel and food, the problem of hauling grain to dependable river outlets and mills, fencing against tame or wild predators, all combined to keep the land uses largely on a basis of local self-sufficiency.⁵

Economics of Early Illinois Settlement

Members of the earlier pioneer communities of central and northern Illinois received some limited amount of service from physicians, ministers, persons on government duty, including some serving in the militia. Some service was received from blacksmiths, wheelwrights, makers of carriages and wagons. Payments for commodities and services were often acceptable in farm products. Not all settlements, however, could be achieved without cash. Taxes, trips on river boats, and stagecoaches, some settlements with business and professional people and even some settlements of wages, called for cash in even the most primitive periods. To come by cash, farm products were moved overland at intervals by the farmer, or by a professional drover or waggoner, or moved by raft or boat. Live animals that could be herded over distances of 100 miles or so, to consumption centers or to points for river shipment, included beef cattle, hogs, and less frequently, turkeys. Products of swine slaughter were in demand at points along the Mississippi and its tributaries. Herding of cattle overland to Atlantic Seaboard areas, from country points not within close range of services on

the major steamboat lines, was due to come, but the well-known Eastern Overland Drover Developments, which came after the 1820's, were mainly from portions of central Illinois not served by streams that would float cattleboats.

Swine and beef cattle were the major sources of cash income received by farmers whose locations, with reference to roads and waterways, made production of small grain for sale as grain or flour difficult. Local merchants were able, in some cases, to attract farmer consumers by taking products from them, for resale, to local users or for distant shipment. Cash items to the settler included medicine, salt, books, dishes and furniture. However, in the 1820's even settlers of the favorite Sangamon River area could obtain but little money from the sale of crops. The villages could consume a small part of the surplus, but to reach other markets was difficult. In 1830 a farmer, named Thomas Bean, tried to sell a crop of corn, but could get no money for it. He traded it for a barrel of whiskey, then swapped the whiskey for a 3-year old steer, and finally sold the animal for \$10.00.⁶ At the stores, produce was more often exchanged for goods than for money; what was sold for cash brought little. Throughout the 20's, according to a careful student in Springfield, in this period:

. . . Corn brought from 5 - 8¢ a bushel in the field. Butter could be bought for 5¢ a lb., eggs for 3¢ a dozen. Venison hams for 25 - 40¢ a pair. Prairie chicken had no value at all. Pork sold from \$1.00 to \$1.50 per hundred, while beef cattle 3 or 4 years old were worth \$8.00 to \$10.00 each. Milk cows brought from \$5.00 to \$10.00⁷

Gershom Flagg, a pioneer of that period, wrote a letter on August 2, 1830, on this subject:

Money is scarce, provisions cheap and plenty. We have had much old corn on hand and worth only 15¢ per bushel; oats 17¢; wheat will not sell for 50¢ per bushel. I have old corn, oats and wheat now on hand.⁸

The important settlements in Illinois were those along the rivers, and the further inland the settlement was, the higher the cost of getting its products to market. The cost of transportation accounted for great differences in commodity prices, in different parts of the country. For example, in 1825 wheat worth no more than 25¢ a bushel in Illinois sold from 80-87.5¢ in Petersburg, Virginia, and during 1829 corn selling from 25-31¢ a bushel in St. Louis sold for 50.0¢ per bushel in Galena, Illinois.⁹

⁴ History of Adams County, 1879, p. 402.

⁵ Stewart, Charles L., 1957—Land Opportunities For & Limits on Pioneer Farming in Central and Northern Illinois in the 1820's and 1830's, Spec. Report, Coll. of Agric., Dept. of Agricultural Economics, Univ. of Ill., Champaign, Ill.

⁶ Angle, Paul, 1935 — Here I Live, Chicago Hist. Soc. Chicago, p. 22.

⁷ Ibid. Angle, p. 22f.

⁸ Buck, Solon J., 1912 — Pioneer Letters of Gershom Flagg. Ill. St. Hist. Soc., Springfield, p. 42.

⁹ Boggess Arthur Clinton, 1908—Settlement in Illinois, 1778-1830, Chicago Historical Society, Chicago, Ill., p. 163f.

Trading at New Orleans

Occasionally, farmers did send their surpluses, together with such furs as they had to sell, down to New Orleans by flatboat, keelboat or pirogue. Their goods were exchanged for such luxuries as sugars, spices, tea, coffee. After their appearance, in the Illinois Valley in the Sangamon River area, steamboats carried more and more of the freight but their charges were so high that farmers continued to rely on flatboats and keelboats.¹⁰

Abraham Lincoln twice floated flatboats to New Orleans, once in 1828 and again in 1831. The first time, he and his companions sold their cargo of:

. . . Potatoes, bacon, hams, flour, apples, in exchange for cotton, tobacco and sugar, and sold the flatboat for what it would bring as lumber.¹¹

When Lincoln was in New Orleans in 1831:

. . . Some shippers, about one in six, were cursing their luck; on the long haul from north of the Ohio River, their pork and flour had spoiled; all they got for their trip was a view of the Mississippi River scenery.¹²

Sites Suitable To Settlers

The early settler followed the woodlands and the stream, because to him an essential factor in location was proximity to timber and water. For several reasons, this pattern remained until long after 1829.¹³ Timber was necessary for fuel; it was essential for the construction of log cabins and erection of fences. Also, the open prairie was suspect. It was considered to be poor grade simply because there were no trees growing on it and it was believed by the settler that, if it would not grow trees, it would not grow other crops. It was through the latter part of the 1820's that the settler cautiously started using small portions of prairie located adjacent to timber and water. There was a generally established principle for farm location that the farm should contain both prairie and timber.

In the so-called oak openings or prairie groves of Illinois, the settler found a new type of forest grove. This was the grove of widespread trees, almost void of undergrowth and carpeted by short sweet grass. Between these trees and under their green boughs, they drove their lumbering wagons easily. Here the wind blew refreshingly free, driving away the plaguing horseflies and mosquitoes. The most characteristic tree which the settlers noted in the oak opening

was one which elsewhere never came to its full grandeur or its characteristic park-like vista. It was known as the burr oak. True that other oaks were often found in the oak openings or prairie groves of the Middle West, but ecologists consider them secondary successors. They have come in after the burr oak has conquered the prairie for them and they in turn make way for a climax forest of other species. The underground root system of the burr oak represents a minimum image of the mighty structure above, so they keep a respectful distance from each other and hold each other off, not so much by their widespreading branches as by the fierce competition of their root system. And that is the explanation of the oak openings, the wide-spaced areas where men drew their wagons to a stop, with a slow deep "whoa", and resolved — "here I will build me a house, here will my children grow up."¹⁴

However, it was more than the beauty of the timbered areas in Illinois which made them and their adjacent prairies the lands desired by settlers. In addition to the utility and shelter offered by the timbered areas, the immediately adjacent small prairies did not have the tough sod so difficult to break as that of the vast prairies of the north. Even after a settler could have broken the thick prairie sod, he must plow the rich but sticky prairie soil. These rich prairies, which after drainage were to become the most valuable farmland in Illinois, posed an insurmountable problem to the early settlers, not only in remoteness of timber and water, but the insurmountable problem of plowing this type of soil with the plows available at that time. Although the cast iron plow was replacing the wooden plow in the east in 1829, it was of little help in the conquest of the Mississippi Valley prairies, due to the fact that the cast iron mold board did not take a high polish and, thus, could not scour the adhesive soil. In addition to increasing tremendously the draft of the plow, a mold board that would not clear could not turn a furrow. A plow with a smooth self-scouring mold board was needed before the Illinois prairie land could be effectively plowed and, although a few blacksmiths had experimented as early as 1833 with making mold boards of old saw blades of high grade imported cast steel, it was not until the end of the 1830's that John Deere began experimenting with the production of steel plows in his blacksmith's shop, in Grand Detour, Illinois.¹⁵

¹⁰ Corliss, Carlton J., 1934 — *Trails to Rails: Illinois Central System*, Chicago, p. 8.

¹¹ Sandburg, Carl, c 1926 — *Abraham Lincoln "The Prairie Years"*, Harcourt Brace N.Y. — V. I, p. 87.

¹² Ibid. Sandburg, V.I, p. 109.

¹³ Pooley, William Vipond, 1908 — *The Settlement of Illinois From 1830 to 1850*, Bulletin of the University of Wisconsin, No. 220, Madison, pp. 42 - 43.

¹⁴ Peattie, Donald Culross, 1938 — *A Prairie Grove*. Simon Schuster, Inc., N.Y.

¹⁵ Rogin, Leo, 1931 — *The Introduction of Farm Machinery, in its relation to the productivity of labor in Agriculture of the U.S., during the 19th Century*. Univ. of Calif. Press, Berkeley, Calif., p. 24.

APPRAISAL OF ROYCE AREAS 147 AND 148

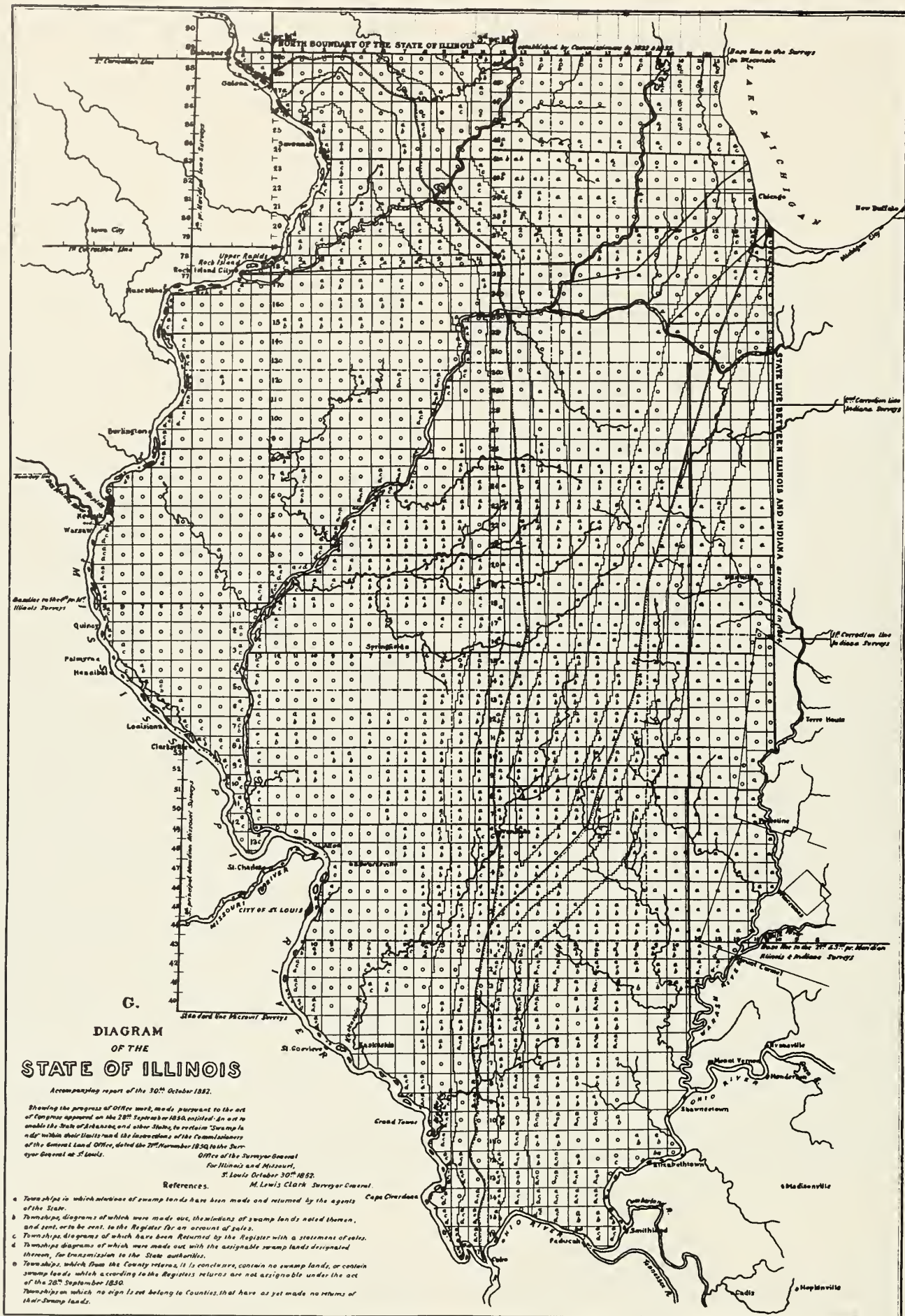


FIGURE 2 - 1 Reported Location of Illinois Swamplands by Townships.

ILLINOIS AGRICULTURE IN 1829

These are some of the reasons why the prairie lands were not considered salable in 1829.

Drainage

Poor natural drainage was characteristic of many of the lands in Illinois, and much of the prairie sections of Illinois were under level or depressional topography and could not, under any circumstances, be used for farming without drainage. About 39% of the farm land in Illinois was at one time in need of drainage. (See Figure 2-1.) This includes some of the richest land in Illinois and, at the present time, only 3.8% of the land in Illinois remains in need of drainage, according to the 1920 Federal Census. Well-drained fertile prairie soil has been designated in Chapter 1 and on the soil maps, following that Chapter, as soil

corner of Illinois and the southeast corner of Wisconsin known as the so-called "Lead Region", in the Un-glaciated Area, that had not been covered by the glaciers. Topography in this region varied from relatively flat areas, especially along the tops of ridges to sharp slopes, particularly on the walls of stream valleys.¹⁷

Erratic deposits of lead ores were found in the Galena Dolomite rock, which lay near the surface in parts of this area.

Climate

Temperature and moisture, or rainfall, are the most important elements in making up climate. The temperature of Illinois is temperate with a difference of 11 degrees of temperature, between the north and

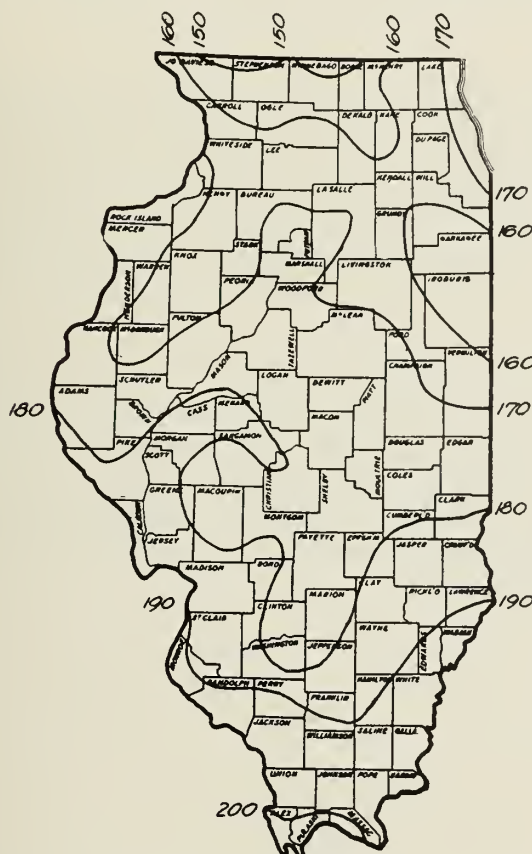


FIGURE 2-2 Illinois Growing Season. Average Number of Days during the Year Without Killing Frost.
Source: Graphical Summary of Illinois Agriculture 1928-9 — University of Illinois College of Agriculture Agricultural Experiment Station and Extension Service

categories 1, 2 and 3. When combined with timber, these were obviously the more desirable types of prairie soil and topography in 1829.¹⁶

Radically different from the soil and topography of the balance of Illinois was the area in the northwest

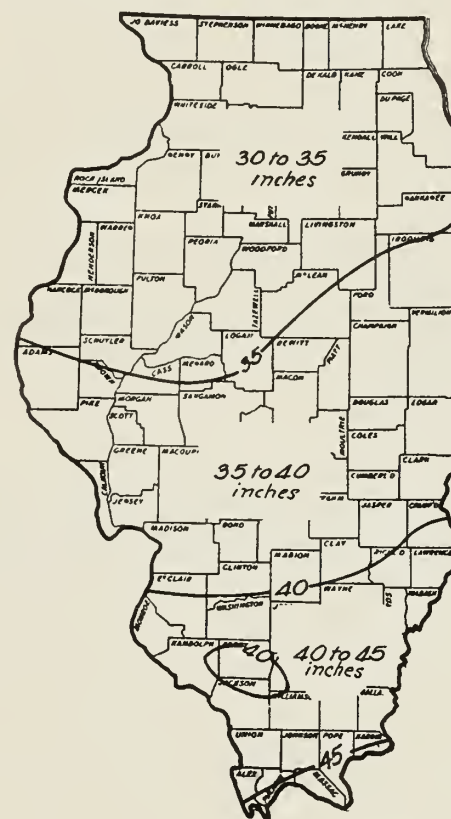


FIGURE 2-3 Yearly Average Rainfall in Illinois
Source: Same as Figure 2-2.

south boundaries of Illinois. The length of the growing season varies from about 160 days in the north to 200 days in parts of the three southernmost counties, and this probably drops to around 140 days of growing season in the southeast corner of Wisconsin. (Fig. 2-2.)

¹⁶ op. cit. Nelson, 1930 — History of Agricultural Illinois.

¹⁷ Schaeffer, Joseph, 1922 — A History of Agriculture in Wisconsin, Wisconsin Domesday Book, General Study, Vol. I. State Hist. Soc. Madison, pp. 4-9-11.

Wisconsin State Planning Committee, 1934—Study of Wisconsin and Its Resources, Its Physical, Social and Economic Background, Bulletin 2.

The rainfall is sufficiently normal to adequately produce the necessary crops. The annual precipitation varies between 30 and 35 inches in the northern part of the state and, as a rule, more than 20 inches of rain falls in the six growing months of April, May, June, July, August and September. (Fig. 2-3.)

Health

Localities generally considered best for settlement were those some four to ten miles from the large rivers. Greater distances from the rivers made the marketing of products certainly more difficult, but living near them was found to be unhealthful. At the time, the reasons for the Illinois ague (malaria) were not understood and the fever was thought to originate from the miasma, which arose from the low places during the night rather than from the mosquitoes now known to carry the disease. Nevertheless, without knowing the true cause, the settlers at the time avoided these damp, low places. On August 2, 1830, Gershom Flagg in a letter to his son from Edwardsville wrote:

We consider the land, generally, that lies from 4 to 10 miles from the large rivers, to be the best for farming and for health. The land near the water courses is richer, but not considered healthy, and after you get some distance from the water courses, the prairies are much too large.¹⁸

Summary

The value of the subject land in 1829 was based on its potential for future settlement by subsistence farmers, who, due to their primitive methods of farm-

ing, consumed most of what they produced. Due to the lack of transportation, even such surplus as might have been produced was difficult to market and the little cash needed for necessary services and equipment was difficult for the settler to obtain. Timberlands, with available water in combination with bordering prairies, were, by necessity, those sought by settlers. Timber for shelter, for building houses and fences, and for fuel, was indispensable. The prairie, lacking these necessities, was unusable and unsought by these early settlers. Further, the prairie sod and soil could be plowed only under great difficulty with the wood or cast iron mold board plows, available at that time. However, even fertile lands having the other desirable attributes were sometimes unusable for agricultural purposes without drainage.

Illinois settlers in 1829 suffered a great deal from the Illinois ague (malaria) which they attributed to low swampy and wet places. Accordingly, they preferred locations a short distance away from rivers rather than those immediately adjacent. The subject areas in Illinois and Wisconsin had adequate rainfall and a growing season of from 140 to 160 days.

In the unglaciated portion of Area 147, in northern Illinois and southern Wisconsin, greater relief and sharper topography provided good drainage; and the many springs, combined with timber, were unions looked on with favor in 1829. This unglaciated area was part of the lead region, in which lead was being mined at the time.

¹⁸ op. cit. Buck, 1912 — Pioneer Letters of Gershom Flagg, p. 42.

II. CONDITIONS EXISTING IN 1829

Chapter 3

TRANSPORTATION FACILITIES - UNITED STATES - ILLINOIS

By the year 1829 commercial roads and overland wagons were being relegated to a position of secondary importance for the movement of bulk freight from East to West. The steamboat had been improved to a point where freight rates not only had been reduced but were established at one level, whether the traffic be up or downstream. The Erie Canal completed in 1825, from New York to Buffalo, had been successfully financed and was operating successfully by 1829. Rates were cut drastically below the transmountain wagon freight rates that had previously prevailed between the East coast, East Pittsburgh, Wheeling and Cincinnati. In the meantime, many other canals were being planned in the East, and in Ohio and Indiana. In Illinois a canal was being contemplated.

In the years prior to 1829, there had been great progress in other areas in many forms of transportation and invention of some new ones. Railroads, while discussed, were not as yet realities. Transportation in the United States had developed from footpaths and horsetrails, of the early days, to the wagon road, the river keelboat and steamboat, and the man-made canal. This tended to make distant areas more accessible and to bring them into the area of potential settlement and development. A prospective purchaser, for these lands in Illinois or Wisconsin in 1829, would have been aware of such transportation developments and shortcomings, and their direct and indirect impact on the utility and value of Areas 147 and 148.

As in the case of the trend of immigration settlement, Illinois was forced to await her turn in the Western movement of people and events. In 1829 the northern part of the state was mostly a trackless wilderness, bounded by trails which were connected by a series of frontier forts. The development and improvement of transportation facilities were anticipated for the future but were not yet effective. The keelboat and the steamboat were on the Mississippi, Illinois and Wabash Rivers, and on some of their tributaries, and there were at least the beginnings of a road system in the southern portion of the state. There was, also, a plan for a canal from Lake Michigan to

the Illinois River, to be built with the aid of a land grant from the United States government. Some of these lands were soon to be offered for sale, to raise money to finance the cost. However, the probable date of the completion of an Illinois-Michigan Canal was problematical, as of 1829. Its ultimate completion in 1848, after many false starts and trials, was not predictable in 1829, and a prospective purchaser would have realized these factors to be handicaps in the settling and utilization of the involved lands.

Accordingly, a review of such facts concerning these existing conditions, which would have confronted a purchaser in 1829, is relevant to a reasonable conclusion as to the then value of the subject properties.

Illinois Rivers and Markets

As indicated in the preceding chapter, one of the greatest problems of the western settlers, both before and after 1829, was to find markets: they lacked not only railroads but also good roads to provide transportational facilities. As navigable streams were the best highways, crops were brought yearly by the settlers from the surrounding territory to towns on the navigable streams for shipment downstream to more advantageous markets. The items that the settlers required were brought to these towns from the East. Inland towns, away from the navigable streams, were small and few as they afforded no markets.¹ Though steps were being taken in this period to establish better overland communications, the rivers remained the more important avenues of transport. The importance of the rivers to Illinois agriculture is illustrated by the fact that freight charges from Springfield to Beardstown by wagon, a distance of forty-five miles, were equal to shipping charges from Beardstown to Louisville by water, a distance of some 700 miles.²

The pioneers settled as closely to the streams as health permitted, not only for the possession of the timber that grew nearby, but also because the rivers served as their chief lines of communication with the trading centers.

¹ op. cit. Pooley, 1908 — Settlement of Illinois — p. 311

² Angle, Paul M., c1935 — Here I have Lived. — A History

of Lincoln's Springfield 1821 - 1865. Rutgers, New Brunswick, New Jersey — p. 36.

Active areas of Illinois settlement in 1829 were the "Sangamon" country, as well as the Military Tract, near the Illinois River and her tributaries,³ where settlers of the period engaged almost exclusively in subsistence farming.⁴

Steamboats

The first steamboats had difficulty in navigating against the strong, up-stream currents, and as a result, in 1814 the upstream freight rate was roughly six times as much as the downstream rate. By 1824 construction of newer and improved boats, together with the competition for upstream cargoes, had cut this freight rate differential to approximately one and one-half times. In 1826 some upstream rates were quoted that were no more than one-ninth higher than downstream, and by 1835 the upstream and downstream rates were in general correspondence.⁵ Actually the steamboats built between 1821 and 1835 were considerably smaller and less powerful and efficient than those which were built later. In 1826 the "Belvidere" took ten days running time (fifteen days elapsed time) between New Orleans and Cincinnati; fourteen years later the "Queen-of-the-West" was to make the same trip in six days and twelve hours.⁶ In 1829 there were fifty-two steamboats in operation in the United States; only a few of these were on the Great Lakes, most of them being on the western rivers.⁷

Steamboats on the Upper Mississippi

During the period from 1823 to 1829, inclusive, approximately three hundred trips had been made by steamboats to the Upper Mississippi; during the year of 1828 ninety-nine arrivals of these vessels were recorded at the lead mines.⁸

In 1829 six steamboats were in regular operation on the Upper Mississippi River between Galena in Area 147, and St. Louis, Missouri, weather and depth of water permitting. They included:⁹

S. B. Red Rover —	Captain Throckmorton
S. B. Missouri —	Captain Calver
S. B. Rover —	Captain Wells
G. P. Shallcross —	
S. B. Josephine —	Captain Clark
S. B. Triton —	Captain Carlyle

There were, however, still navigational problems due to winter weather conditions and water level fluctuations, on the Ohio and the Mississippi and their tributaries, causing navigation suspensions and hence, proving a hindrance to the development of interior trade.¹⁰ Not until the railroad reached Galena, Illinois in 1855 was interior trade free of such hinderance. With reference to steamboat navigation on northwestern waters, Berry states that:

A sequence of low water, ice and floods occasionally prohibited navigation for over six months at a time.¹¹

He commented on the effect of these conditions with a statement that

Fluctuations in the level of the water in the Ohio and Mississippi, and their tributaries, exerted a profound influence not only on freight rates but, also, on prices and trade in the interior. Although apparently seasonal in character, the partial and total suspension of navigation were so unpredictable in timing and duration that their influence could not be confined to an annual cycle. A similar situation was met in the case of agricultural crops and prices.^{12 13}

Two rapids of the Upper Mississippi formed steamboat navigation obstructions to Area 147: one, at Rock Island, Illinois, at the mouth of the Rock River, descended 25'5" in 11¼ miles; the other, at the mouth of the Des Moines (Des Moines) River, descended 21'10" in 13¾ miles. In both of these rapids were ledges of rock, with intervals of deep water, extending across the Mississippi River. As a result, passage between the key commercial towns of St. Louis and Galena, the latter the supply town of the lead region, was not navigable during unfavorable summer periods of low water or during the adverse winter months, when the rapids could only be negotiated by smaller steamboats. These vessels operated between Prairie du Chien, Galena and St. Louis; if the height of the water did not permit passage of the rapids, they limited their operation to the waters between Prairie du Chien, Galena and the Des Moines Rapids. In August of 1829 the Galena Advertiser carried the following notice:

Steamboat Josephine will operate as a regular packet between Galena and the Des Moines Rapids. If the water should rise sufficiently the Josephine will make occasional trips to St. Louis.¹⁴

³ See Frontispiece for location of Military Tract and the Sangamon Country (indicated on map as "comparable area").

⁴ Carlson, Theodore L., 1951 — The Illinois Military Tract — A Study of Land Occupation, Utilization and Tenure. University of Illinois Press, Urbana, p. 36f.
op. cit. Angle, 1953 — Here I Have Lived — p. 22.

⁵ Berry, Thomas Senior, 1943 — Western Prices Before 1861 — Harvard University Press, pp. 56 - 57.

⁶ Ibid. Berry — p. 34.

⁷ Bureau of Marine Inspection and Navigation, 1936, Merchant Marine Statistics, p. 42.

⁸ Stevens, Frank E., 1881 — History of Lee County — H. H. Hill, Chicago, p. 217.

⁹ From Steam Register as shown in Galena Advertiser during period of April and May 1829.

¹⁰ Schockel, B. H., 1916 — History of Development of Jo Daviess County, Illinois, State Geological Survey Bulletin No. 26, p. 215.

¹¹ op. cit. Berry, 1943 — Western Prices Before 1861, p. 60.

¹² Ibid, Berry, p. 60.

¹³ Cheltain, A. L., — Recollections of Seventy Years, page 47, states: "Goods were two months in transit from Philadelphia to Galena. Merchants at Galena replenished their stock of goods but twice a year and hence it was impossible to anticipate the demand of the shifting population and rapidly to fill orders for goods, the stock of which had been exhausted temporarily."

¹⁴ Galena Advertiser — August 15, 1829.

Steamboats on the Illinois River

Steam navigation had begun on the Illinois River in 1828, and by connecting the frontier with the older settlements, strengthened the former.¹⁵ This helped the Sangamon country become the most popular area of settlement in Illinois in 1828 and 1829¹⁶ and aided in the settlement of the Illinois Military Tract.¹⁷ Although the first steamboat had ascended the Illinois River in 1828, it was not until 1832 that the "Talisman" initiated steamboating over the Sangamon River. However, steamboat transportation was not to reach into Illinois, above Lake Peoria, until 1848, when the Illinois-Michigan Canal was finally completed.¹⁸ Accordingly, in 1829 river steamboat transportation did not touch any area, or have immediate prospects of touching any location, close to subject area 148.

Steamboats on Lake Michigan

Steamboats were slower to ply the Great Lakes due to the lack of settlement along their shores during the 1820's. The opening of the Erie Canal, in 1825, and the talk of canal building around Niagara Falls (the Welland Canal), and in Ohio and Indiana just before 1830, stimulated future steamboating in the Lakes region. Mrs. John Kinzie, wife of a trader and early settler at old Fort Dearborn, reported that in Chicago's early days two or three sailing ships usually came in each year to bring supplies and to pick up packets of fur collected at the trading post.¹⁹ The furs were then taken to Mackinac Island, during the 1820's, where they were subsequently processed and shipped to the markets of the world by the American Fur Company.²⁰ Various schooners, including the "Chicago Packet" and the "Virginia", operated at the head of Lake Michigan. An Ohio distiller with a cargo of whiskey, in the year 1829, unable to sell his cargo in Detroit, Mackinac or Milwaukee, ultimately reached Chicago and disposed of all but ten barrels there.²¹

While lake transport was to become an important factor in the future growth of Chicago, and in the development of the old Northwest, including the subject territory, the commerce on Lake Michigan was confined to the hauling of provisions for the forts and the Indian trade, with return cargoes of fur and a small business for a few schooners; this situation continued

until after the Black Hawk War in 1832.²² The first steamboat on the Great Lakes appeared on Lake Ontario in 1816 and on Lake Erie in 1818.

The first steamboat, to appear on Lake Michigan, was in 1821, with the arrival of the "Walk-in-the-Water" in Green Bay, transporting 200 passengers, including a detachment of soldiers bound for the upper country; at this time Green Bay was a much more important settlement than Chicago. The round trip from Detroit was made in thirteen days, and shortly thereafter she made three visits to Mackinac, these being the only trips undertaken this far north. In October of 1821 she was wrecked.²³ It was not until 1832, however, that the first steamer, the "Sheldon Thompson," put in an appearance at Chicago. During the entire trip, completed on July 10, cholera raged among the passengers; soldiers sent to fight Black Hawk's braves.²⁴

National Roads

Steamboats and new turnpikes in the East helped but did not solve the problem of moving goods from east to west. Of roads leading to Illinois from the East, the Cumberland Road, also known as the National Road, built in the 1825-1833 period, (present U.S. 40) was the first and, perhaps, the most important one undertaken by the National Government. (See Figure 5-4.)²⁵ Work on the road west of Wheeling, West Virginia was begun in 1825-26, and had only reached Columbus, Ohio by 1833, although its intended destination was Vandalia, Illinois. This road meant a great deal more to the development of Ohio than it did to Illinois.²⁶ Some idea of the wretched character of these early roads can be obtained through the specifications in the contract for building the extension through Ohio and Indiana in 1829:

All stumps must be cleared from the middle 30 feet of the 80 - foot road.

This proved too expensive and it was later modified to require that:

All trees over 18" in diameter be cut, not exceeding 15 inches from the surface, and be rounded and trimmed, so as not to be an obstacle to carriages. On the remaining 50 feet, the stumps were required not to exceed 1½ feet in height.²⁷

¹⁵ op. cit. Pooley, 1908 — Settlement of Illinois — p. 325.

¹⁶ Springfield Land Office — A general discussion of this area appears in Chapter 8 of this volume.

¹⁷ A general discussion of the Illinois Military Tract appears in Chapter 10 of this volume.

¹⁸ A general discussion of the Illinois - Michigan Canal appears in Chapter 9 of this volume.

¹⁹ op. cit. Kinzie, 1932 — The Early Day in the North - West pp. 225 - 226.

²⁰ Hatcher, Harlan, 1944 — The Great Lakes — Oxford University Press, London, New York — p. 203.

Quaife, Milo Milton, 1944 — Lake Michigan — Bobbs — Merrill, Indianapolis — pp. 177 - 180.

²¹ Mansfield, John Brandt, 1899 — History of the Great Lakes — Chicago Deers, Vol. I — p. 183.

²² Ibid. Mansfield, p. 184.

²³ op. cit. Quaife, 1944 — Lake Michigan — p. 138.

²⁴ op. cit. Quaife, 1944 — Lake Michigan — p. 146.

²⁵ Chapter 5.

²⁶ Adams, James Truslow, ed. 1840 — Dictionary of American History — Scribner New York — V. 4, p. 63.

²⁷ Dunbar, S., 1937 — A History of Travel in America — Tudor Publishing Company, New York — p. 719.

Wagon freight rates, at this time, could not compete with steamboat transportation rates in the West. For one reason, the eastbound freight was comprised of bulk articles that bore insufficient value, in relation to their size and weight, and, as a result, inbound freights of wagons were generally forced to pay for the round trip. Added to this was the long distance over poor roads and the time consumed in the journey.²⁸ Up to 1829 the reduction in upstream rates from New Orleans was so much greater than the decrease in wagon rates, that any article of unusual weight or bulk could be shipped to Cincinnati more economically from the eastern seaboard, or Europe, by way of New Orleans.²⁹

Roads in Illinois

Improved means of communication, including better roads, were an ever-present concern of the settlers; as already indicated, by 1829, the southern part of Illinois had at least the beginnings of a road system. A traveler willing to brave exposure to Indians, wolves, rattlesnakes, and worst of all, to the swarms of green-headed flies, could travel to almost any of the settled places by wagon road or well-marked trail.³⁰

The villages of Southern Illinois, at the period 1826-1830, were frontier settlements, many containing not more than twenty inhabitants. The settlers were scattered throughout the timbered tracts, forming ribbons of settlement along the two rivers on the south, east and west boundaries of the state. Kaskaskia, on the Mississippi River, the seat of government, and Shawneetown, on the Ohio River, were best known to early settlers, who came to these points as a base of searching suitable places for their homes and families. Towns were located in the immediate vicinity of rivers, and new settlements appeared as the older ones continued to increase in size. Vandalia, founded in 1813, became the state capital in 1819.

By 1826 Shawneetown had grown from a town of three or four houses to a town of sixty houses and three hundred inhabitants, and up to 1830 was still the chief town of the eastern side of the state and the landing place of a great portion of the immigrants coming by way of the Ohio River. The population of the "Sangamon" country in 1830 was 42,385, more than one-fourth of the population of the entire state,

which warranted the erection of the six new counties of Greene, Morgan, Macoupin, Montgomery, Macon and Shelby. Springfield, (formerly called Calhoun), which did not become the capital of Illinois until 1839, was established in 1819; although it was characterized as a straggling village in 1830, Springfield was, perhaps, the most important town in this part of the State.³¹ When John T. Stewart first saw Springfield in 1828 it was a village of no more than five hundred people, composed of a string of small houses, some daubed with mud and all devoid of paint. There were a number of roads leading from Springfield to Galena in Area 147, to St. Louis, to Vincennes via Vandalia, to Jacksonville and Beardstown to the south.³² (See Map 1-1.³³) Even as late as 1830 the Indians came back to hunt within the limits of settlement, and fear of them retarded the advancement of the frontier.³⁴

In 1830 the mail passed across Southern Illinois between St. Louis, Missouri and Vincennes, Indiana three times per week; between St. Louis and Marysville and St. Charles, Illinois twice a week; and between Springfield, Peoria and Galena, at the lead mines, once a week. No point in Illinois received mail more than once a week. When the legislature of Illinois authorized a survey to find a more direct route than the existing circuitous one between Vincennes, Indiana, and St. Louis, Missouri, the following was reported:

The distance between Vincennes and St. Louis was made up of one-fourth timberland and three-fourths prairies, from 5 to 20 miles across. The settlements were, therefore, scattered and far between, and confined to the vicinity of the timbered land. More than 19/20ths of the land, over which the road passes, is the property of the federal government. To make necessary causeways and bridges, and keep the road in a proper state of repair, is beyond the capacity of the people who reside in it.³⁵

Examination of the Historical Map of Illinois, by Rufus C. Blanchard, conveys an idea of the existing towns and system of roads, prior to 1830 (Figure 3-1.)

In the Military Tract, located between the Illinois and Mississippi Rivers, the greater percentage of the 13,000 population in 1830 was located west of the Sangamon area near the Illinois River (Schuyler and Fulton Counties 5000 persons) and along the Mississippi River in Pike, Calhoun and Adams Counties.³⁶

²⁸ op. cit. Berry, 1943 — Western Prices Before 1861 — p. 74.

²⁹ Ibid. Berry, p. 80.

³⁰ op. cit. Corliss, 1934 — Trails to Rails — p. 9 ff.

For a good discussion of transportation in Illinois before 1830, see also op. cit. Boggess, 1908 — Settlement in Illinois, pp. 118 - 127, 153 - 164.

³¹ op. cit. Pooley, 1908 — Settlement of Illinois — pp. 321-325.

³² History of Sangamon County, Illinois — Inter-State Publishing Company, Chicago, 1881 — pp. 196 - 198. (See Map 1 - 1.)

³³ Chapter 1 - page 5.

³⁴ op. cit. Pooley, 1908 — Settlement of Illinois — p. 323.

³⁵ op. cit. Boggess, 1908 — Settlement in Illinois — p. 158.

³⁶ op. cit. Pool, 1908 — Settlement of Illinois — p. 327.

TRANSPORTATION FACILITIES - UNITED STATES - ILLINOIS



FIGURE 3-1 Historical Map of Illinois

Quincy, Illinois on the Mississippi was an important town in 1830 and, in the north, Peoria, on the stage route northward to Galena, was a small fortified place of refuge with fifteen to twenty log cabins.

Arteries of Transportation in Northern Illinois

However, while southern Illinois had the beginnings of a road system in 1829, only limited and sketchy trails led to the northern wilderness. The route from southern Illinois to northern Illinois was the road through Peoria to Galena and the lead mines. The old "Fort Clark and Wabash Trail", and an old Indian trail from Danville, also led to Peoria. The legislature provided for a state road to Danville in 1826, and made the Springfield-Peoria route a state road in 1827.³⁷

For several years much of the time of the county commissioners' courts was taken up with petitions for roads, and many local roads were "viewed, marked and staked." The records of the Tazewell County³⁸ court for June 1827 indicate how sketchy these roads were. A group of men spent three days marking a road in that county, from Mackinaw to Kickapoo Creek, a distance of perhaps three miles. They were paid \$2.25 each and one was given 75 cents extra for "furnishing wagons to haul stakes in for three days."³⁹

Although these routes and trails ran northward in 1829, from the limits of Illinois settlement to the lead region in Area 147 near the Mississippi River, on both sides of the Illinois-Wisconsin border, the most important approach to Galena and the lead area was the Mississippi River itself. The most accessible routes to the north central and the north-eastern area of Illinois were also the waterways; at one side Lake Michigan; at the other, the river routes over the Illinois River, the Desplaines River, the portage between, and the Chicago River. However, even though this entire route was to become navigable many years later as the Illinois-Michigan Canal, it lay ten miles southerly of Area 148 in the canal strip belonging to the State of Illinois and the United States. Chicago, on Lake Michigan ten miles south of the southern border of Area 148-A, was still only the location of a small fort and a way-station in the fur trade

without any good wagon roads, accessible only by the trails that one day were to become roads.⁴⁰

Routes to Chicago from Ottawa and the Southwest

Until the Black Hawk War in 1832, the only route to Chicago from the southwest was by way of the Desplaines and the Illinois Rivers. In 1829 there were a few settlers that had located in the valley of the DuPage River, near the northern border of Will County and just south of Plainfield, in the canal strip lying south of Area 148-A. In the Fox River Valley, Kendall and Du Page were the only counties with any settlements before the Black Hawk War, and of these, Traper's settlement in Du Page County, with 180 people, was the only one of importance. Quaife and Richmond have said that the first permanent settlement in Du Page County was made in the fall of 1830 and during the spring of the year following.⁴¹ This coincides with the fact that the first lands were offered for sale by the Illinois Land Commissioners in the canal strip in the year of 1830. From Chicago to Ottawa, Illinois, over the 20-mile canal strip, adjoining the south border of Area 148, passed the old Potawatomi thoroughfare, known as the Prairie Trail. After the Black Hawk War, Chicago was laid out and a road was eventually built over this trail; the first stagecoach west, out of Chicago, made its initial run on this road on January 1, 1834. Another trail from Ottawa, Illinois, at the mouth of the Fox River passed through Naperville to Chicago.⁴²

Other Routes to Chicago

Chicago had no roads, only river ferry trade routes navigable by canoe and such lake transportation as existed was used largely in connection with the fur trade. By land, the approaches to Chicago were by trails which were to become the roads in the future. These included the portage route and the track to Dixon's Ferry, the Chicago Road, the Vincennes Trace, and the Green Bay Road, northward to Green Bay along Lake Michigan, through the eastern edge of Area 148-A.⁴³ Also important was the Great Sauk Trail, which crossed Illinois from east to west, on a line just south of the southerly end of Lake Michigan. This trail did not actually touch Chicago

³⁷ op. cit. Corliss, 1934 — Trails to Rails, p. 12.
Rice, James M., 1912 — Peoria City and County, Illinois — S. J. Clarke, Chicago, V. I, p. 135.

³⁸ In northern part of Springfield Land Office; see Figure 5-6.

³⁹ Charles C. Chapman, 1879 — History of Tazewell County, Illinois — Chicago, p. 227.

⁴⁰ Lee, Judson Fisk, April 1917 — Transportation — A Factor in the Development of Northern Illinois Previous to 1860, Illinois State Historical Society Journal, V. 10, No. 1, p. 20.

⁴¹ NOTE: This was in the canal strip south of the subject area.

Quaife, Milo Milton, 1923 — Chicago's Highways, Old and New — Keller, Chicago, pp. 58 - 71.

Richmond, C. W. and Vallette, 1857 — A History of the County of DuPage, Illinois, Scripps, Bross & Spears, Chicago, p. 6.

⁴² Ibid. Quaife — pp. 72 - 78.

⁴³ That part of Area 148 lying east of the Fox River designated for convenience as Area 148 - A.

but crossed Illinois from the Mississippi River to the head of Lake Michigan, joining the Chicago Road, as it rounded the head of the lake.⁴⁴ (See Map 1-1.)⁴⁵

The Chicago Road

The Chicago Road, going south and east from Chicago, was like a great many other trails. It probably was first traced by the buffalo and, before the advent of the whites, an Indian trail had passed southward from Green Bay to Chicago and around the head of the lake to Detroit. Military posts at Chicago, Detroit and Fort Wayne made communication important between these points, and in 1824 Congress authorized the survey of a route from Detroit to Chicago. Actually begun in 1825, the survey for this road followed the old Indian trail between these points. Not until 1832 was this survey completed through western Michigan. However, as early as 1830, a semi-weekly stage ran from Detroit to Ypsilanti, Michigan, about 35 miles to the west. By 1832 the stage went from Detroit to Niles, in Berrien County, Michigan, but it was not until 1833, after the end of the Black Hawk War, that a passenger could travel on a coach all the way from Detroit to Chicago over this route.⁴⁶

The Vincennes Trace

The Vincennes Trace extending southward from Chicago was first important to the fur trade. In 1824 Gordon S. Hubbard, an agent for the American Fur Company, beat down a pack trail from Danville, on the Indiana border, where he had a trading post, 125 miles northward to Fort Dearborn and Chicago. Later he extended it southward over the old Indian path which led down to Vincennes, Indiana. When the State Road was planned between Vincennes and Chicago in 1834, it followed Hubbard's trail with little deviation. It was over this road that the Hoosier (Indiana) farmers were later to carry their products to Chicago until the coming of the railroads many years later caused it to be abandoned.⁴⁷

The Green Bay Trail

From Green Bay, Wisconsin down to Fort Dearborn, at Chicago, ran the Green Bay Trail, actually several more or less parallel variants known by one name. This trail passed through Area 148-A. The first importance of this trail to white men was as a

line of communication between Fort Howard at Green Bay and Fort Dearborn at Chicago. From the earliest days of the forts, mail was carried overland from Fort Wayne, Indiana to Fort Dearborn at Chicago, and from Fort Dearborn over the Green Bay Trail to Fort Howard at Green Bay. The round trip was some 500 odd miles and usually consumed about a month's time in travel. Although some work was done in building of this trail into a post road, with money appropriated by Congress after the Black Hawk War, as late as December 1834 the streams were still unbridged and the road generally poor.

Roads to Galena

The bulk of the traffic to Galena, Illinois in Area 147 was not overland, but over the Mississippi River by way of steamer, keelboat or flatboat, as previously described. This water traffic was principally for the freighting of furs and lead to St. Louis and bringing supplies to the migratory population of lead miners in the Upper Mississippi Valley mines.

In the early 1820's only Indian trails existed north and west of Peoria. The new discovery of lead in northwestern Illinois and southwestern Wisconsin created an urge to travel there, and in 1825 Oliver Kellogg blazed a wagon trail through northern Illinois to Galena; he crossed the Rock River at a point where Joseph Ogee later set up his ferry; this was prior to 1828. Ogee was induced by a man named John Dixon⁴⁸ to install the ferry and in 1829 Dixon took it over from him, employing Indians to help with the work. Wagons were set on two canoes, two wheels in each, and floated across the river; the horses forced to swim. Dixon later set up a flatboat ferry in the same neighborhood, at the place now called by his name. In 1826 a more direct trail, bearing west of Kellogg's Trail, was blazed from Ogee's Ferry to Galena; and later still, an even more direct route, known as "Lewiston Trail," was established. It branched off from Kellogg's Trail, near the northern boundary of Peoria County, and crossed the Rock River just above Prophetstown.⁴⁹ Even as late as 1832, during the Black Hawk War, Dixon's Ferry was still the only river crossing in Area 148, and for many miles up and down the Rock River it was the focal point between Fort Dearborn at Chicago and Fort Armstrong, on the Mississippi at the mouth of the Rock River, and was important as a supply depot and

⁴⁴ op. cit. Corliss, 1934 — Trails to Rails, Illinois Central System, p. 4.

⁴⁵ Chapter 1 — p. 5.

⁴⁶ op. cit. Quaife, 1923 — Chicago and the Old Northwest, 1673 - 1835, pp. 37 - 50.

⁴⁷ op. cit., Corliss, 1934 — Trails to Rails, p. 12.

op. cit., Quaife, 1923 — Chicago's Highways, pp. 58 - 71.

⁴⁸ Referred to previously in Chapter 1, p. — in a quotation from Jefferson Davis.

⁴⁹ op. cit. Corliss, 1934 — Trails to Rails — p. 13. Corliss, Carlton J., 1881 — History of Lee County, Illinois — pp. 33 - 38. (See Map 1 - 1, page 5, for location of ferry.)

rendezvous for United States troops.⁵⁰ As early as 1829 the traffic to the lead region over this crossing was extensive. Through May and June of that year from five to twenty teams were ferried across per day, and then in September and October there was a great stream southward. An early observer wrote that among those passing through were ministers, judges, lawyers, and "blacklegs whose name is legion." In 1829 there was also a tavern at this ferry. Travelers were accommodated as far as the tavern's beds, bedding, and table room would permit. There were two wings with a bedroom in each and a hall in between. The owner and his family slept in one room, and the other room with its four beds was for guests. But often not only were all beds filled, but people slept on buffalo robes on the floors of both rooms and in the hall, and at times there were so many guests that some had to sleep out-of-doors.⁵¹

Over the ferry also went the mail carrier who traveled on horseback by way of Peoria from Vandalia to Galena, where the first post office had been set up in 1826. Later, contemporary issues of the *Galena Advertiser* in 1829 carried reference to a stage line operating once per week. Chandler's Map of 1829 also states:

. . . That mail arrives weekly in stages from St. Louis and private hacks, run from Galena to every part of the mining district.⁵²

Many persons traveled on horseback, many walked, and others drove wagons and teams. Canvas-covered wagons with four yoke of oxen were frequently at the ferry in the spring and fall. Teamsters who spent the summer at the Upper Mississippi lead mines hauling ore from the mines to the furnaces or lead from the furnaces to Galena for shipment, in the autumn drove south to their homes, sometimes freighting a load of lead to St. Louis. These men fed their animals by letting them browse at night; cooked their own food in the open; and slept in their wagons. Sometimes the teamsters brought their families with them to the lead district.⁵³ The teamsters soon wore a broad road from the ferry northwesterly to Galena, in Area 147, but the trail from Galena to Chicago in and north of Area 148 remained uncertain.

Summary

In 1829 freight rates between the West and the Atlantic coast had been cut, due to the opening of the

Erie Canal and improved steamboat construction which had cut upstream rates on the Mississippi. However, winter weather and water level fluctuations created navigational limitations on that river that were a hindrance to the development of interior trade. The two rapids of the Upper Mississippi formed obstructions, creating unusually severe problems of river transportation between Galena, in Area 147, and St. Louis, Missouri.

The population of Illinois was located in the south, which had the beginnings of a road system linking towns, but the rivers remained the principal avenues of transportation. Land transportation costs were fifteen times as high as water transportation rates, and thus, most of the towns were to be found close to the rivers. In northern Illinois there were no roads, merely trails, and Galena, the headquarters of the lead mining area on the Mississippi River near the Wisconsin border, was the only settlement of note.

Chicago was a place consisting of a fort and a few cabins, with no water transportation, with the exception of two or three sailing ships passing over Lake Michigan each year to pick up furs and to bring in supplies. Only trails led to Chicago by land and canoes over the portage to the Illinois and Mississippi Rivers.

The most important point in Area 148 was Ogee's (Dixon's) Ferry on the Rock River, on the road from Springfield, through Peoria, to Galena and the lead mines. The Illinois-Michigan Canal, through the canal strip lying south of Area 148, was only in the planning stage. The North was still beset with Indian troubles, and prior to the ending of the Black Hawk War in 1832, the movement of settlement was still preponderantly from south to north.

Accordingly, it was apparent in 1829, that at some time in the future, with the end of Indian troubles, improved transportation and continuing expansion of settlers, certain parts of Areas 147 and 148 would be absorbed by the natural progress of settlement. Accordingly, a prospective 1829 purchaser would have recognized the potential future appeal of such lands to settlers; but, at the same time, he would have realized that a great deal of time must necessarily elapse after July 29, 1829 to enable their development and subsequent disposal in competition with other lands that were available both within and without the State of Illinois.

⁵⁰ Ibid. Corliss, p. 38.

⁵¹ Ibid. Corliss, p. 35f.

⁵² See Map, Chapter 13, Figure 13 - 15.
Miner's Journal, August 15, 1829, p. 3 carried advertisement

for proposals to carry the United States mail between Galena and Peoria, and vice versa, once each week. The scheduled time of the trip was two and one-half days.

⁵³ op. cit. Corliss, 1934 — Trails to Rails, p. 13.
op. cit. Boggess, 1908 — Settlement in Illinois, p. 159.

Chapter 4

GENERAL CONDITIONS AND FACTORS AFFECTING LAND VALUES IN ILLINOIS IN 1829

A prospective purchaser in 1829, of such tracts of Illinois lands as Area 147 and Area 148, must be assumed to have been a qualified businessman of the time, acting on the profit motive under then existing conditions. Accordingly, a valuation of the subject areas as of 1829 must reflect the type of place that the United States, and Illinois, was at that time. Values existing at that time were a reflection of the number, location and character of people who lived there and the economic conditions under which those people lived and worked. Contemporary values also stemmed to a very great extent from the attitudes and economic means of such people; those who would acquire and occupy small tracts, as well as those who were able to finance the purchase of such large tracts as the subject property for the purpose of resale in smaller tracts to prospective settlers and investors.

Therefore, in order to arrive at the fair market value of the subject property in 1829, it becomes necessary to review and evaluate those existing 1829 conditions and valuation factors, of which well-informed prospective purchasers for these tracts would either have been aware or would have ascertained before making a purchase, viz., (1) the national outlook and economic conditions; (2) the attitude of the population toward the acquisition of public lands in Illinois; (3) the history of the demand for lands in Illinois, as evidenced by public land sales in Illinois and adjoining states, to date; (4) the availability and cost of money; (5) the 1829 sources of credit, both for large and small investors; and finally (6) the relative large size of the proposed investment, in 1829, in a contemplated purchase of in excess of 3,500,000 acres of undeveloped Illinois lands.

As the attitudes of individual land purchasers in 1829, as well as economic conditions then prevailing, differed very radically from those existing today, an appraiser historically evaluating lands in Illinois as of that date could make no more serious mistake than to attribute our current attitudes, present land valuation factors and economic conditions to our forefathers. Primarily an appraiser of lands as of a date in the distant past must endeavor to discover the facts, attitudes, and conditions affecting the values of lands of that period in order to attain realistic and valid conclusions as to contemporary values. From well documented historical facts it is possible to en-

vision, in retrospect, the spirit and viewpoint of the land-buying public in Illinois as of July 29, 1829. The appraiser must examine and consider these 1829 conditions under which an assumed able, willing and prudent prospective purchaser of the subject lands, impelled by the profit motive, likely would have viewed the matter of this proposed land acquisition. Also, the matter of the prospective purchase must be viewed from the standpoint of the other interested party — the seller of the lands. He must likewise be assumed to have been well informed and not to have been laboring under any form of compulsion or duress.

The National Economic Outlook

The contemporary economic outlook for the United States and the attitude of the public toward the acquisition of public lands were both important factors influencing a sound conclusion as to fair market value of the subject lands by both a willing seller and a prospective purchaser in 1829.

The period from 1824 to 1829 was developing into a turning point in the expansion and growth of the United States. This development and subsequent westward growth had started with the favorable termination of the War of 1812. As a result, this country had acquired new strength, free from European influences, and felt free to expand its regrowth over the broad land that stretched to the westward from the Alleghenies. Economically, the country was also changing. Factories began appearing in the eastern cities and, although there were no railroads, the transportation system of roads, canals and rivers was, as previously related, improving. The 1824-1829 period was marked by the enthusiastic promotion, planning, and, sometimes, by the actual construction of canals. The Erie Canal had been completed in 1825. At that time other canal systems in the East and in Ohio were under construction, and plans had been made for a canal in Illinois to link Lake Michigan with the Mississippi River via the Illinois River. As communications improved, men became dissatisfied with the political system that had been in effect for over twenty years, in which the Republican caucus (by members of Congress) selected the nominee for President. Nomination by this congressional caucus had been equivalent to election, and up to that

year our Presidents had been country gentlemen (Washington, Jefferson, Madison, Monroe) or New England intellectuals, who had been elected by men of property. The older states were casting aside the property qualifications for ballot that survived the Revolution. Western states were entering the Union with Constitutional Provision for manhood suffrage. As a result, "the common man," both in the East and in the West, was now getting the right to vote, and in 1824 the people gave to Andrew Jackson, the hero of New Orleans, the largest electoral vote to date. However, as Jackson did not have a majority, the election was thrown into Congress, and as a result John Quincy Adams was elected. Four years later, in 1828, the people elected Andrew Jackson to the presidency by an overwhelming majority and a new era began. President Jackson and his administration sought to please the people who had elected them to office¹

This condition would have been given serious consideration by a potential buyer, in view of the popular attitude favoring downward "graduation" from the existing minimum \$1.25 retail price of the vast areas of unsold Government lands.²

Economic Outlook

The year of 1829 was a year of both depression and revival in the United States, following a sequence of moderate prosperity and recession in the years of 1827 and 1828. Money became severely stringent during 1828. There were many business failures the first half of 1829 and money did not ease until after July of that year. Dullness yielded to increased activity and revival in the autumn of 1829. Business conditions, thereafter, revived into periods of moderate prosperity followed by prosperity in the years of 1830 and 1831.³

The year 1829 witnessed an increased activity in the purchases of public lands. The income that year from public land sales was the second most important revenue source of the United States Government, but it was a poor second, totaling for the year only \$1.5 million, as compared with total Federal Government receipts of \$24.8 million, \$22.7 million of which came from customs receipts.⁴

But a new boom, which eventually led to an even greater bust, was about to begin. In 1829, however, a potential purchaser of the subject tracts for resale to settlers would have considered the general eco-

nomic conditions for the foreseeable future favorable for the sale of land to settlers, within the limits of indicated effective demand, as will be hereinafter indicated.

Banks and Lending Institutions in 1829

A financial transaction in 1829 of such magnitude as the purchase of Areas 147 and 148, in Illinois and Wisconsin, would have required either substantial capital or substantial credit as a banking establishment, in order to consummate the transaction. Therefore, it becomes pertinent to inquire into the character, the sources and availability of the finances necessary to effect such a transaction. It is, likewise, important to consider the availability of money to enable settlers to repurchase the lands in small tracts from a purchaser who had previously bought them for resale.

The fairly new enterprise of banking was coming into greater prominence, during the 1820's. The banks and financial institutions that existed in Illinois in 1829 significantly disclose the limited amount of capital then available for investments in large tracts of land, and also obtainable to finance investors and settlers in acquiring smaller portions for home sites. At this time in our history there was no financial institution in Illinois, or in the entire United States, designed primarily to make long-term capital loans. The first commercial bank to be founded in the United States was the Bank of North America set up in Philadelphia in 1781. By 1811 there were 88 commercial banks; by 1816, 246 of them; by 1820 there were 307; and by 1829, according to Hepburn, a recognized authority on American finance, this number had increased to 329.⁵ These commercial banks assumed the function of making real estate loans, a type of loan unsuited to the nature of commercial banking, and consequently were left with an asset structure lacking in the necessary liquidity which later caused many bank failures.

In 1829, all of the 281 commercial banks in the United States had a total capital of only \$110.1 million; deposits of all kinds of \$40.8 million; note circulation of \$48.4 million; specie (gold and silver) reserves of \$14.9 million; and outstanding loans as of 1830 of only \$160 million.

The Second Bank of the United States, chartered by Congress for twenty years (1816-36), was the fiscal

¹ Pease, Theodore Calvin, 1949 — *The Story of Illinois*—University of Chicago Press, Chicago, Illinois.

² See Chapter 6.

³ Thorpe, Willard Long, 1926 — *Business Annals* — National Bureau of Economic Research, Inc. — pp. 76, 119-120.

⁴ U.S. Department of Commerce, *Historical Statistics of United States 1789 - 1945* — Series pp. 89 - 98, 297.

⁵ Hepburn, A. B., 1915 — *A History of Currency in the U.S.*, MacMillan, New York. p. 73 and p. 127.

agent of the United States Government and held the bulk of its deposit. In 1829 it had a capital of \$35 million and deposits of \$17 million. This was "feared" as one of the "tremendous" financial institutions of the time, and when Andrew Jackson became President of the United States in 1829 he immediately showed signs of hostility toward this "big privileged bank," the renewal of whose recharter was the chief issue of the 1832 election. The Clay party, or National Republicans (later known as Whigs), its advocate, was defeated. Indicative of powerful and influential contemporary thinking, existing at this time, was the attitude of President Jackson and his friend Senator T. H. (Old Bullion) Benton of Missouri, who believed as a result of the experiences of the panic and depression of 1818-19, that money should always be in the form of "specie" and not in paper notes.⁶

The explanation of the dearth of banks in the West, as of 1829, is that most of them had failed, as a result of the Panic of 1819. Senator Thomas Hart Benton, one of the first Senators from Missouri, admitted to the Union in 1820, tells of proceeding to Washington, "amidst the resounding crash of banks on all sides." Albert Gallatin, Secretary of the Treasury under President Jefferson, and President of the National Bank of New York (1832-1839), credited Kentucky, Ohio, Illinois, Indiana and Missouri with only forty-two banks in 1820, and with none in 1830, due to subsequent bank failures during the 1820-1829 decade.⁷

The economy, development and expansion of the West had been badly hurt by such failing banks. Banks were few in number in the pioneer Midwest and in other portions of the country newly opened to settlement. Illinois, for example, originally had two banks, one at Edwardsville and the other, the State Bank of Illinois at Shawneetown, which collapsed in 1821. Previously the Bank of Illinois at Shawneetown was chartered in the year 1817. In 1818 the previously mentioned Bank of Edwardsville and another, the Bank of Cairo, Illinois were chartered. However, the chartered Bank of Cairo actually never came into existence. Its unused charter was later revised in 1836, only for speculative purposes, and was finally repealed in 1843. The Bank at Edwardsville and the Bank of Illinois at Shawneetown each became depositories for funds of the United States accruing from Government land sales. Both created credit and issued notes, on the basis of these land sales deposits, and of the two, the bank at Shawneetown proved more

successful. In 1819 a speculative boom in town lots and government land swept the State of Illinois. This boom was financed by these two State banks, which created credit and issued notes. The collapse of both banks in 1820 left the State of Illinois with overwhelming financial problems, as all sound money by now had been driven out of circulation. The Edwardsville Bank failed during the financial crisis of 1819-1820. Although the Shawneetown Bank did not actually fail, it did suspend operations in 1821. In the same year, primarily as a relief measure for debtors, the Illinois legislature created a State Bank with its main office in Vandalia, then the State capital. Four of its branches were also established in Shawneetown, Edwardsville, Brownsville and Palmyra.⁸ This State bank and its branches were established to make loans to citizens needing money and was authorized to issue notes up to \$300,000. Even the creation of this State Bank was an inflationary measure, established upon unsound principles to solve problems which had been created, in part, by previous unsound banking methods and practices. The notes of the State Bank and its branches were not acceptable as money at the land offices, but were made a sort of legal tender for debts and were not circulated outside of the State of Illinois.⁹

As everyone began to borrow from this Illinois State Bank, irrespective of credit risks, it had great difficulty in collecting its debts. The bank did not dare sue creditors in the courts, fearing that the legislative act establishing it would have been declared unconstitutional. In 1824 the notes of the State Bank had depreciated to 27 cents on the dollar. The bank was finally closed in 1831, and during its last years the legislature had reduced its activities to one of trying to collect the debts due it. Governor Thomas Ford of Illinois, in his autobiography, says of the establishment of several banks by the Illinois legislature in 1834:

I aver, without fear of contraction, that when these banks were chartered, there was, in a manner, no surplus capital in the State; that the capital came mostly from abroad; that the stockholders resided at a distance, and never had a meeting in proper person in this State; that we had no cities, and but few large towns; that in a manner, we exported nothing, but imported everything except meat and breadstuffs, and indeed much of these. We had no settled society. The business men were not generally men of commercial training and education. The laws did not favor the collection of debts, nor did the public sentiment frown upon a want of punctuality.¹⁰

⁶ Economic Aspects of the Second Bank of the United States — Harvard Press, Cambridge, 1953 - p. 146.

⁷ Gallatin, A., 1831 — Currency and Banking System in U.S. — Carey & Lea, Philadelphia — pp. 102 - 105.

⁸ See Figure 3 - 1, Chapter 3.

⁹ Phillip, F. M., 1896 — History of State Banking in Illinois — Unpublished thesis. University of Illinois, Urbana, Illinois, p. 88.

¹⁰ Ford, Thomas, 1845 — A History of Illinois, S. C. Griggs & Company, Chicago, Illinois — p. 174.

During the 1820's trade was carried on in Illinois in such a way that the State was continually drained of sound circulating media. The sound currency was drained off in payment for debts due to the eastern merchants, for hardware and other necessary supplies. The products of the West built up credits at New Orleans. However, the exchange mechanism, furnished by the Second Bank of the United States and its branches, did not enable the credits accumulated by the West at New Orleans to be offset against the debts owed the East. This was a most important and deterrent exchange problem for the people of Illinois in 1829.¹¹ During this period the currency problem had to be met with bank notes issued by both sound and unsound state banks in Illinois and elsewhere. Bank notes from eastern banks also circulated and, understandably, at many different rates of discounts. Counterfeiting, stimulated by the scarcity of money, only a state offense at this time, was widespread. There were two kinds of money in Illinois, land office money and current money: land office money was that issued by certain banks which was acceptable in exchange for public lands at the government land office, and this list of acceptable money changed frequently; current money was bank money that would pass in local trade but which was not acceptable at the land office. The latter circulated at a discount of 10% to 20% below money acceptable at the land offices.¹²

The currency situation was so confused that Pease makes the statement that the meager trade of the time was carried on in spite of the circulating medium rather than with it. The lack of adequate circulating media in 1829 was evident. The situation was not only confusing, but also was a retarding factor to the development of trade and exchange. These financial problems in Illinois were the same as those that were facing the other new undeveloped areas of the West during the 1820's. However in the final analysis, the real basis of these problems was a scarcity of capital, often misunderstood as a scarcity of money.

Other Indications of Financial Background in 1829

In 1829 the amount of money required to have purchased or to have financed the purchase of the subject Areas 147 and 148, in 1829, necessarily would have been considered a very large investment, in perspective with the existing supply of capital and with respect to other contemporary 1829 investments. For example, a number of insurance companies were organized in the United States, between 1826 and 1828, with capital of only from \$200,000 to \$500,000 each.¹⁴

In addition to the figures previously mentioned, those of the national debt, the annual income, expenditures and revenues of the Federal Government for the year 1829 are also revealing, when related to the amount of money necessary to acquire Areas 147 and 148, at their fair market value. They were about as follows:

1. In 1829 the gross national debt was approximately \$58,000,000.¹⁵
2. The total current national income was \$975 million or \$78, per capita, in the same year.
3. Total Federal Government expenditures for 1829 were approximately \$15 million, against total receipts of just under \$25 million, of which only \$1½ million were from the sale of public land.¹⁷
4. The total money in circulation, in the United States, in 1829, was \$81.1 million of which \$21 million was specie, \$11.9 million United States bank notes, and \$48.2 million in state bank notes. During the year a little over \$2 million in specie was coined.¹⁸

As a measure of relative financial magnitude the acquisition of the subject Areas in 1829, at their fair market values, as hereinafter estimated, would have required a total capital investment approximately equal to 1.2% of the total resources of the Second Bank of the United States; equal to 2.8% of the total loans made by all of the commercial banks of the United States; equal to 1% of all of the United States money in circulation; and equal to in excess of

¹¹ Pease, Theodore Calvin, 1949 — *The Story of Illinois*, University of Chicago Press, Chicago, Illinois, pp. 86-87.

¹² op. cit. Phillippi, 1896 — *History of State Banking in Illinois*.

¹³ op. cit. Pease, 1949 — *Story of Illinois* — pp. 86-87.

¹⁴ Drake, B. and Mansfield, E. D., 1827 — *Cincinnati in 1826* — Cincinnati, p. 80.

Ohio Insurance Company at Cincinnati was organized in January 1826 with capital of \$250,000.

Blandy, Joseph G., 1934 — *Maryland Business Corp. 1753-1852* Johns Hopkins Press — pp. 24-25.

The Fireman's Ins. Co. of Baltimore was organized in 1826 with capital of \$500,000.

The Neptune Ins. Co. was organized in 1828 with capital of \$200,000.

The Maryland Ins. Co. was organized in 1828 with capital of \$500,000.

The American Ins. Co. of Baltimore was organized in 1828 with capital of \$200,000.

¹⁵ \$58,421,000 — *Historical Statistics U.S. 1789 - 1945* — Dept. of Commerce of U.S. 1952 — p. 306 Table Series p. 132-142.

¹⁶ Jones, Frederick W. (Editor) — *National Industrial Conference Board — 1953-4*, Thomas Y. Crowell, N.Y., p. 505.

¹⁷ op. cit. *Historical Statistics* — Series p. 99-108, page 301 and Series p. 89-98, page 297.

¹⁸ op. cit. *Historical Statistics of the United States 1789-1945* — Series N 1-18, p. 261.

GENERAL CONDITIONS AND FACTORS AFFECTING LAND VALUES

50% of the total 1829 income of the United States Government from the sale of all public lands in the entire United States.

Interest Rates

The current price of money in 1829 would have had an important influence on the price which a prospective purchaser would have been warranted in paying for the subject property. As the highest and best use of these lands was for resale to settlers at a future date, the prospective investor would estimate a probable rate of their resale, from which receipts he could retire his original investment and, in the meantime, earn interest at the going rate available in other investments of comparable risk.

The rate of interest demanded by investors on any investment has always varied with the risk, management burden and liquidity of the purchase. Traditionally, United States Government bonds have represented the minimum interest return, for they represent maximum liquidity, maximum safety of capital and a minimum of management problems. As the certainty and the liquidity of capital becomes less assured and the burden of management associated with the investment increases, the premium over such a base interest rate increases.

As an example of a base or risk-free rate of that time, in 1822 the United States Treasury offered a 5% per annum rate of interest in a refunding operation which proved to be too low. The Second Bank of the United States was authorized to make loans at not over a 6% rate. The State Bank of Illinois during its short existence also made loans to individuals at 6%, but, as this was an inflationary measure for the relief of debtors with a \$1000 per loan limit, it cannot be taken as indicative of interest rates in Illinois.¹⁹

Other examples consist of loans made by the House of Baring, a leading financial house in England. In 1828 the Consolidated Planters of Louisiana offered \$2.5 million 10 - 15 year bonds and were chagrined to find no demand. Baring agreed to buy for his house \$1,660,000 "face value" interest at 5%, to be payable at the fixed rate of 4/6d to the dollar.²⁰

By 1833 the 3 W's, the Brown Family firms (Philadelphia and Liverpool houses), and smaller firms were advancing commercial capital and were re-

ceiving a total of 6% interest, plus additional amounts for commissions, discounts, services and insurance for purchasers in the United States.²¹ By comparison, Pease cites examples of short term loans in Illinois, bringing 10% per month, 30% to 50% per year, and 30% to 40% per year, on a two-year basis.²²

Writing from Edwardsville, in Madison County, Illinois, on August 2, 1830, Gershom Flagg stated:

People are giving 25% interest for money to buy land with, notwithstanding land is so plenty here. We may well suppose that when money will fetch 25% interest, and sometimes more, that those who have it will let it out, as they have the land for security in addition to a note . . .²³

Further evidence of Illinois interest rates on money available to settlers to buy land is Carlson's statement that the loan office of Mason & Company, located in Edwardsville, loaned the necessary \$200 to buy a quarter of a section of government land, on mortgage and personal security, at an annual interest rate of 35%.²⁴

The price of money outside of Illinois is referred to by Drake and Mansfield who wrote in 1827 regarding the demand for capital in the Cincinnati, Ohio area:

Capital, to a large amount, may be so invested in real estate, that it will immediately produce from 10 to 12 per cent per annum. Many investments have been made that yield at this time from 12 to 18 per cent. Nothing can be hazarded in stating that, capital judiciously expended in the purchase of real estate in this city, at present prices, will yield permanently from 10 to 12 per cent per annum.

Cincinnati, for several years, has been deficient in the amount of its disposable capital: a nominal superfluity of it existed during the prosperity of the local banks: after their destruction, paper currency was almost withdrawn from circulation, and much of the metallic currency applied to the payment of the debts due the U.S. Bank, and the eastern merchants. From this condition of affairs the city has been gradually recovering, but its citizens are not yet large capitalists. Although engaged in profitable business, most of them have not the means of extending it to a scale proportioned to their enterprise, and the resources of the place. Money is consequently in great demand, and a high price is willingly paid for its use. For small sums 36 per cent per annum, is frequently given, and for large ones from 10 to 20 per cent is common. Indeed the market value of money may be safely estimated at from 10 to 15 per cent; for there are but few investments in which it will not yield that amount.²⁵

¹⁹ Schultz, William J. and Caine, M. R., 1937 — *Financial Development of the U.S.* Prentice-Hall (N.Y.), p. 162.

²⁰ Hidy, Ralph, 1949 — *The House of Baring* — Harvard Univ. Press, p. 96.

²¹ Ibid. Hidy — p. 170.

²² Pease, Theodore Calvin, 1916 — *The Frontier State, 1818-*

1848 — *Illinois Centennial Commission, Springfield* — p. 182.

²³ op. cit. Buck, 1912 — *Pioneer Letters of Gershom Flagg*, p. 42.

²⁴ Chapman, Charles C., 1880 — *History of Pike County, Illinois* — Charles C. Chapman & Co., Chicago, Illinois, p. 229.

²⁵ op. cit. Drake and Mansfield, 1827 — *Cincinnati in 1826* — p. 82.

At this time Ohio, with approximately 900,000 population, was a much more settled state than Illinois on the frontier with a population of only 157,000. Cincinnati, "Queen City of the West," located on the Ohio River in the path of westward expansion, was the leading western city of the time. With a population of 16,230 and 2,495 buildings and important city amenities, it had a branch of the Second Bank of the United States, an authorized commercial bank, and was an important western market and manufacturing city and port of distribution.²⁶ Accordingly, even a productive investment, with good assurance of success in 1829, would have commanded a rate of return of between 10 % and 15% per annum. Certainly, the former rate (10%) is the very minimum interest return on the investment, based on the conditions of the existing money market, that could conceivably be applied in 1829 to the sum used by a purchaser of large tracts of undeveloped Illinois lands for subsequent disposal in small tracts to settlers.

Summary

Although lendable capital is now one of the most mobile factors of production, its fluidity is the result of the development of efficient financial institutions.

Lack of development in banking, insurance, stock exchanges, corporation law and protection of property rights kept capital relatively immobile during the 1820's. Capital was particularly scarce in the West, due to the failure of the western banks in 1819. In 1829 there were still no banks in Illinois, Kentucky, Indiana, Missouri and Ohio.

An investment in 1829 of such magnitude as the purchase of the subject Areas 147 and 148, would have been one of the most important transactions of the time and, it must be assumed, would have been entered into only by those most financially responsible, and also well informed as to all phases of this contemplated immense real estate transaction.

Interest rates in Illinois and other western states during the 1820's reflected the scarcity of capital in the West. An investment such as the purchase of the subject Areas 147 and 148 would have commanded, at the very minimum, an interest rate of 10% per annum in 1829. After consideration of the assumptions for anticipated resale of the subject property at retail, as developed and outlined in following chapters of this report, that annual rate of interest is chosen as being commensurate with the assumed risks.

²⁶ Ibid. Drake and Mansfield — pp. 19, 28, 58, 59, 74, and 77.

Chapter 5

SETTLEMENT TRENDS AND PREFERENCES FOR LANDS IN ILLINOIS AND WISCONSIN AS OF 1829

Was the population of the United States on the move, in 1829, and in what direction? Where were the settlers coming from, and where were they going? Were the subject lands in Illinois and in Wisconsin in the path of this migration? If so, when would they arrive there and in what numbers? What kind of land would they require when they arrived and did Illinois contain extensive areas of such land? What was Illinois like in 1829? The answers to these questions are closely related to the market value of the subject lands in 1829. Also these questions are those to which a prospective 1829 purchaser would have sought the answers before acquiring the subject land for resale. They have been answered, in part, in the preceding chapters. They will be answered more fully in this chapter and others following.

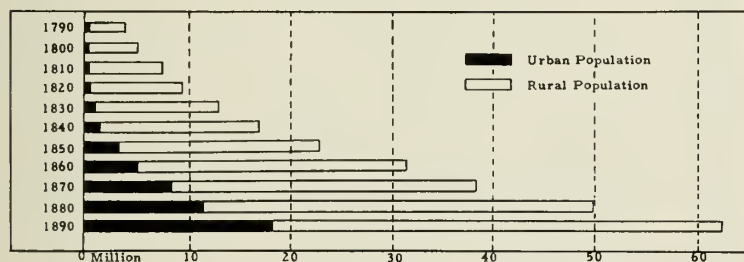


FIGURE 5-1 Urban and Total Population at Each Census 1790 - 1890

Source: United States Department of Commerce, Statistical Atlas of the United States, 1890 — page 9.

The Tide of Westward Expansion as of 1829

Population movement was continuing to flow westward. As the year of 1829 immediately preceded the census year of 1830, we have a statistical measure of population growth in the nation, and of the rate, trend and direction of westward expansion. The population of the United States had been increasing at the rate of approximately 35% each ten years since 1790,¹ and by 1830 the population had reached a total of 12,886,020. This population was almost entirely rural.² This fact is shown graphically on Figure 5-1. The average age of the inhabitants of the United States in 1830 was seventeen years, compared to thirty

years today. People were young and hopeful and endowed with the aggressiveness of youth. There were only twenty-six towns of 8,000 or more population, in the entire nation. The United States was indeed a young nation. Population density increased with each census from 1810 to 1830. Although still low in 1830 at 6.25 persons per square mile, its density had increased from the 4.82 persons per square mile in 1820. (See Figure 5-2)³

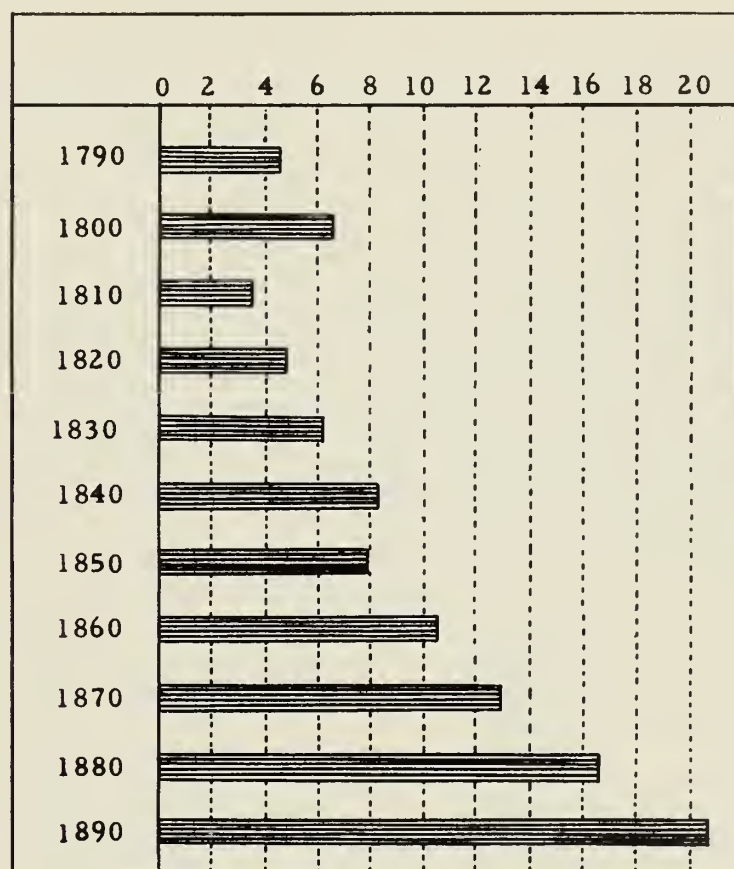


FIGURE 5-2 Number of Inhabitants to the Square Mile at Each Census 1790 - 1890

Source: United States Department of Commerce, Statistical Atlas of the United States, 1890 — page 9.

The pressure of expansion and settlement had been moving the center of population westward at the rate of approximately forty miles per decade.⁴

¹ The increase in the decade 1820 - 1830 was 33.55%.

² Gannett, Henry, 1898 — Statistical Atlas of the United States — Government Printing Office, Washington — Table,

page 9.

³ Ibid. Gannett — Chart 2.

⁴ Ibid. Gannett — Page 10, Chart 4. Page 11, Table.

Figure 5-3 shows the center of population in the

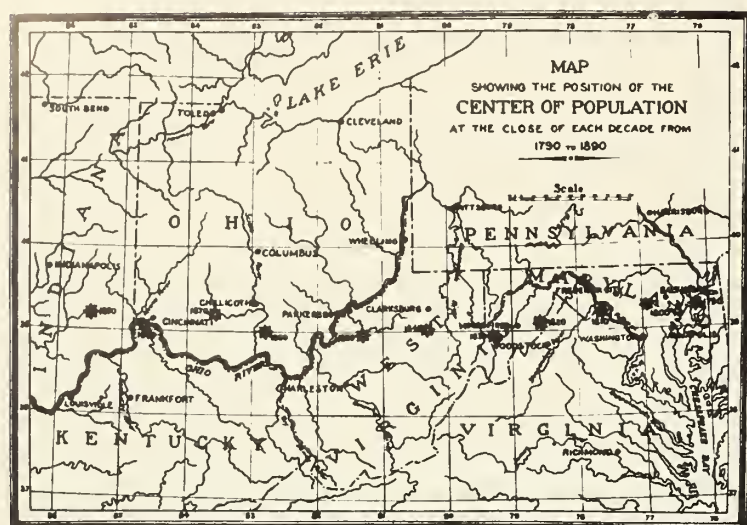


FIGURE 5 - 3

United States each year from 1790 to 1830. For the nine newer states, lying west of the Appalachian Mountains, the rate of growth was greater than the national average. The density of settlement, of course, was less. This had been true throughout our history. The population of the nine new states of Ohio, Indiana, Illinois, Mississippi, Alabama, Louisiana, Kentucky, Tennessee and Missouri doubled from one million population in 1810, to two million in 1820, and almost redoubled by 1830 when their total population was 3.6 million. In 1829 the already great supply of public lands on the frontier was constantly being increased and far ex-

Table 5 - A

The Proportion Between the Total Area of United States and the Settled Area at Each Census

Census	Percentage Which Settled Area Bore to Total Area
1790	28.98
1800	36.93
1810	20.40
1820	25.44
1830	30.73
1840	39.21
1850	32.85
1860	39.49
1870	42.04
1880	51.88
1890	64.36

Source: United States Department of Commerce, 1898, Statistical Atlas of the United States, page 14.

Walter R. Kuehnle — 1958

ceeded the existing demand. As a matter of fact, by 1830 the percentage of settled area to the total area of the United States, amounting to only 30.73%, had not increased appreciably since 1790. Due to the vast new acres that were being added to the Public Domain, the percentage of settled area in 1830 was actually lower than it was in 1800. Table 5-A shows the percentage of settled area to total area, in the United States, at each census to 1830.⁵ However, by 1830 the density of the population in the settled areas had increased somewhat to 20.33 persons per square mile.⁶ Table 5-B shows the average density of population in the settled areas of the United States during the 1790 to 1830 period.⁷ Thus, with vast areas of public lands from which to choose, settlers selected only the types best suited to their purposes, avoiding the other types.

Routes of Settlement

In Illinois and Wisconsin, prior to the Black Hawk War in 1832, the States of Kentucky, Ohio, Indiana and Illinois had been in the path of this westward migration, but Ohio and parts of Indiana were settled by people from the East. The map (Figure 5-4) illustrates the geographic location of Illinois with reference to the routes of westward migration.⁸ Also, prior to this time, the use of the great natural routes of the Ohio, Tennessee, Kentucky and Cumberland Rivers and their tributaries, as well as that of the Wilderness Trail⁹ over the Cumberland Gap to the falls of the Ohio, resulted in a large proportion of the early settlers in Illinois coming from Maryland, Virginia, the Carolinas and from Kentucky, Tennessee

Table 5 - B

The Progress for Settlement in United States at Each Census

Census	Settled Area (Square Miles)	Average Density
1790	239,935	16.38
1800	305,708	17.36
1810	407,945	17.75
1820	508,717	18.94
1830	632,717	20.33
1840	807,292	21.14
1850	979,249	23.68
1860	1,194,754	26.32
1870	1,272,239	30.31
1880	1,569,565	31.96
1890	1,947,280	32.16

Source: United States Department of Commerce, 1898, Statistical Atlas of the United States, page 14.

Walter R. Kuehnle — 1958

⁵ Ibid. Gannett — p. 14.

⁶ Ibid. Gannett, p. 14.

⁷ Average density for the entire area of the United States for each decade starting with 1790. Ibid. Gannett (revised 1949), p. 10.

⁸ Muzzey, David Saville and Kidger, Horace — 1953 — The United States — Ginn & Company, Boston, p. 369.

⁹ op. cit. Adams, 1940 Dictionary of American History—Vol. 5, p. 465.
op. cit. Boggess 1908, Settlement in Illinois 1778-1830, pp. 92-93.

SETTLEMENT TRENDS AND PREFERENCE FOR LAND

and Georgia, who later were followed by friends and relatives from the South.¹⁰ This migration from the south was given impetus by the migration into Illinois of anti-slavers, poor whites and small farmers, who were displaced by the cotton plantation system in the south through the early 1820's.¹¹



FIGURE 5 - 4 Early Roads and Canals. Redrawn from D. S. Muzzy's "The United States," 1953, opposite page 369.

In 1829 Illinois was still a frontier area. Although it was in the path of westward expansion, other states to the east and south had first chance to supply land to the immigrants. A comparison with the neighboring States of Indiana, Ohio to the east and Kentucky to the south makes possible the measurement of the progress of settlement in Illinois and of its relatively slow development up to 1829. In 1820 the population of Illinois was approximately 40,000, while Ohio in the path of the immigration from the East, which was settled principally from New England, had achieved a population of 600,000 persons. Indiana, on the east boundary of Illinois, had reached by 1829 a population of approximately 150,000, while Kentucky to the south, in the path of the emigration from south to the north, had acquired a population of over 300,000. During the decade from 1820 to 1830, with migration into Illinois from the south, from the east and from the north central states, it had increased in population to only 157,000 persons, while the populations in Ohio, Kentucky and Indiana increased to approximately 900,000, 500,000 and 300,000, respectively. (See Figure 5-6.) Obviously, Illinois was on the extreme westward fringe of the path of expansion and had to await its turn for settlers.¹² This fact undoubtedly would have been noted by a prospective purchaser of Areas 147 and 148 in 1829. His interest in the lands, and the price that he could have logically be-

lieved himself warranted in paying for them, necessarily would have depended on the known demand for Illinois and Wisconsin lands as related to the existing supply and the probable necessary holding period before they could be resold at retail to settlers at a profit.

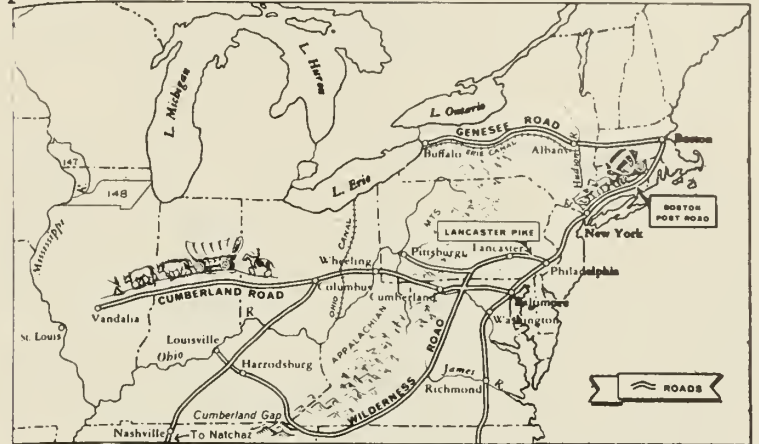


FIGURE 5 - 5 Transportation in the Early Nineteenth Century. Individual riders had to compete on the road with what seemed then to be heavy traffic: Conestoga wagons drawn by horses, mules, or even oxen; stage coaches; and droves of cattle, sheep, and even turkeys or geese.

The Character and Trend of Illinois Settlement

During the westward population movement after the War of 1812, the settlement of Illinois began in the southern part of the state, as has been previously shown, and until after the Black Hawk War in 1832 moved northward by degrees. The major factors giving impetus to its settlement during this period were the Treaty of Edwardsville with the Kickapoos in 1819, which made lands available for this purpose north of the 39° parallel, a factor which in 1824 con-



FIGURE 5 - 6 Population of Kentucky, Indiana, Ohio, Illinois at Each Census 1800 - 1890

¹⁰ Ibid. Boggess, p. 127.

¹¹ Kemmerer, Donald L. and Bogart, Ernest, 1953 — Economic History of the American People — Longmans Green—

New York — p. 250.

¹² op. cit. Gannett, 1898 — Statistical Atlas of United States, p.p. 12 and 13.

tributed to the defeat of the effort to make Illinois a slave state. The slow movement of the population into the State from south to north was not interrupted until the end of the Black Hawk War in 1832, when Illinois was finally freed from Indian troubles. Thereafter, the opening of steam navigation on the Great Lakes resulted in agricultural settlers from the East migrating to northern Illinois by that route.

As has already been shown, great natural routes led to Illinois from the South. These routes crossed the Ohio River into Illinois at Shawneetown. Most of the early Illinois migration came from the south over these routes and settled in Illinois, just as New England settled Ohio, Michigan and part of Indiana.¹³ During this period an observer in Madison County, Illinois, a county of 5000 population, which was 25 miles east of St. Louis, Missouri, described his surroundings and the people in them, as follows:

The surrounding country, however, was quite sparsely settled, and destitute of any energy or enterprise among the people; their labors and attentions being chiefly confined to the hunting game, which then abounded and tilling a small patch of corn for bread, relying on game for remaining supplies of the table. Inhabitants were of most generous and hospitable character and were principally from the southern states; harmony and the utmost good feeling prevailed throughout the country.¹⁴

The broad prairies were avoided by these early settlers who chose the uplands heavily timbered with hardwood forests.¹⁵ The presence of heavy growth of deciduous hardwood timber was moreover regarded as evidence of good soil. The immigrant evidenced his preference with the proverbial expression that he was going to "strike for the tall timber."¹⁶ To these pioneers the prairies offered insurmountable obstacles, with which they felt it was useless to cope.¹⁷ However, by the late 1820's Illinois settlers were indicating a preference for land with a "just" proportion of prairie and timber, located near adequate water and water transportation. This resulted in a wide dispersion of settlement on good timber tracts, with the treeless prairies remaining uninhabited. This was a well-known fact, of which any well-informed prospective purchaser of the subject lands would have taken cognizance in 1829.

In 1812, at the start of this early settlement period, Illinois was a second-rate territory with 12,000 inhabitants, practically all of whom were located

between the Ohio and the Kaskaskia Rivers (See Figure 3 - 1).¹⁸ In 1818 Illinois, with claims to a population of 40,000, became a state. The settled portion of Illinois, at about that time, is shown by Figure 5-7,

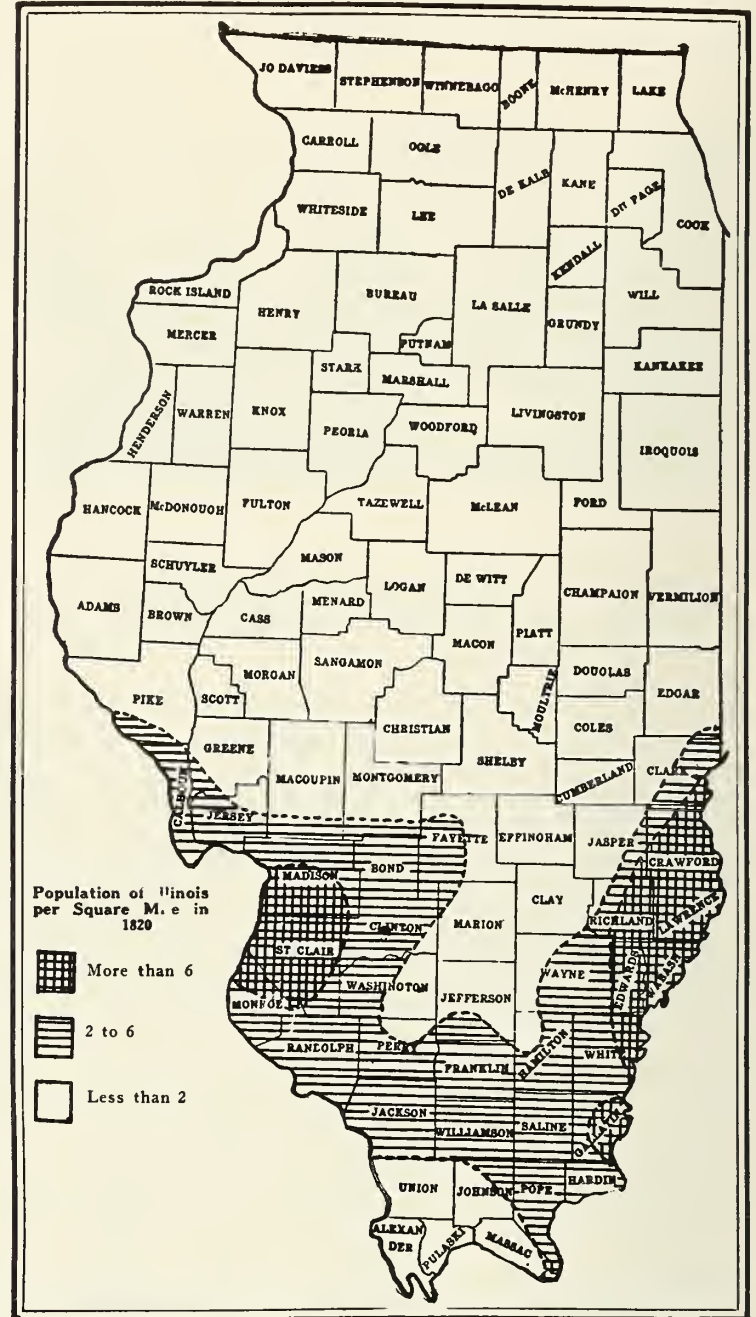


FIGURE 5 - 7

Source: Pease, 1919, *The Frontier State*, p. 4

a map which shows the area of settlement and density of population in 1820.¹⁹

Although southern Illinois was not yet settled in 1820 it was ready to throw out lines of pioneers toward the north. The eastern part of the state, close to the

¹³ op. cit. Boggess, 1908 — *Settlement in Illinois* — pp. 124-127.

¹⁴ Ibid. Boggess, pp. 132 - 133.

¹⁵ op. cit. Pease, 1949 — *Story of Illinois* — p. 90.

¹⁶ op. cit. Kemmerer and Bogart, 1953 — *Economic History*

of the American People — Chapter XI. p. 243.

¹⁷ op. cit. Pooley, 1908 — *Settlement of Illinois*, p. 323.

¹⁸ Chapter 3.

¹⁹ op. cit. Pease, 1919 — *The Frontier State, 1818 - 1848* — Vol-II, p. 4.

SETTLEMENT TRENDS AND PREFERENCE FOR LAND

rivers, was well taken up as was the western part, while between lay the unoccupied portion. Rather than risk the attempt to settle and cultivate the prairie, with which they could not cope, the new settlers preferred to go farther north toward the frontier.²⁰ The second phase of settlement came with the Kickapoo Treaty, at Edwardsville, on July 18, 1819, which opened the land north of the 39° parallel. During the 1820's, settlers pushed northward into this fertile, well-watered and well-timbered Kickapoo Cession south of the Sangamon River. Here, between the tracts of timberland, were small prairies where the sod was not as tough, nor the grass as long, as on the larger prairies. Settlers of these lands acquired tracts that contained water, timber for building, fencing and fuel, and prairie for growing crops without the laborious task of clearing the forest.²¹ In 1824 the plan to revise the State constitution of Illinois to permit slavery was defeated and as a result emigration and northward expansion in Illinois set in with a new vigor, reaching its greatest development in 1827 and 1828.²² By 1828 and 1829 Sangamon County, within the Kickapoo Cession of 1819, with its land offices at Springfield, was a favorite place for settlement.²³ (See Figure 5-8.) The pattern of settlement between 1823 and 1829 for the lands included in the Springfield Land Office, east of the Illinois River, has been analyzed in great detail in Chapter 8.²⁴ After the opening of Illinois for settlement north of the 39° parallel in 1819, by the Kickapoo Treaty, migration to Illinois continued from the South, but migration from the North also increased proportionately.²⁵ As, due to lack of sufficient demand, almost all public land in Illinois could be acquired at the minimum government price of \$1.25 per acre, after 1820, only the choicest and best located public lands in Illinois, by then contemporary standards, were purchased, and as a result settlement became widely distributed.²⁶ This created serious governmental problems particularly for internal improvement.

Concurrently with the settlement of the Sangamon River area of Illinois, certain significant developments were taking place in the "bounty lands" of the Illinois Military Tract, lying to the west of the Sangamon area, across the Illinois River. This region had been set aside for the veterans of the War of 1812 for the location of bounty warrant lands. By 1830 the Military Tract had reached a population of 13,000 persons, who were similar in character to set-

tlers in the Sangamon area. This large area was situated between the Illinois and Mississippi Rivers and shaped like an irregular curvilinear triangle, with the southern point at the junction of the two rivers, and the base (90 miles wide) at the north end, 169 miles due north of their junction.²⁷ Except in the extreme north and south, these "bounty lands" were

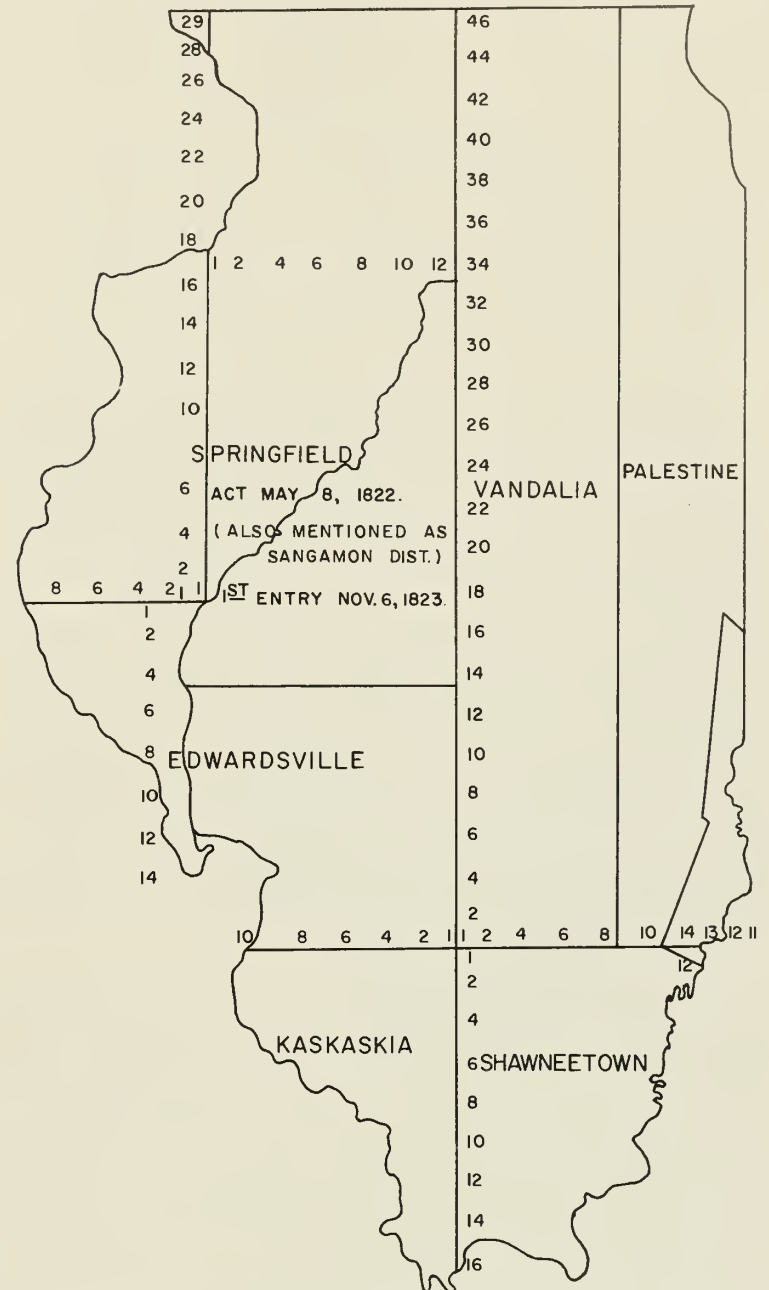


FIGURE 5-8 Land Offices in Illinois — 1822 to 1830.

tlers in the Sangamon area. This large area was situated between the Illinois and Mississippi Rivers and shaped like an irregular curvilinear triangle, with the southern point at the junction of the two rivers, and the base (90 miles wide) at the north end, 169 miles due north of their junction.²⁷ Except in the extreme north and south, these "bounty lands" were

²⁰ op. cit. Pooley, 1908 — Settlement of Illinois, p. 323.

²¹ Ibid. Pooley — p. 324.

²² Ibid. Pooley — p. 325.

²³ op. cit. Boggess, 1908 — Settlement in Illinois, p. 144.

²⁴ See frontispiece for location "comparable area."

²⁵ Ibid. Boggess — pp. 134 - 135.

²⁶ Ibid. Boggess — pp. 136 - 138.

²⁷ Frontispiece map shows the location of the Illinois Military Tract.

op. cit. Carlson, 1951 — Illinois Military Tract, pp. 5 - 6.

a few miles in extent. (Figure 5 - 9.) Commencing in 1817, patents were ultimately drawn by lot by war veterans holding warrants, on almost 3 million acres of land within this tract.²⁸ The entire Military Tract consisted of 5,360,000 acres or about 8,700 square miles. Of this area selected lands, comprising two-thirds of the total or 3,500,000 acres, were reserved for soldier bounties. The remainder, about 1,860,000 acres, consisted largely of fractional or quarter sections that were not distributed as bounties, and of lands unfit for cultivation.²⁹ Very few of the soldiers who received patents as soldier bounties settled on the land, but either sold their patents or lost the lands due to non-payment of taxes. Unlike government lands which were tax free for five years after sale, bounty lands were subject to taxes, beginning on October 6, 1817, after issuance of patents.³⁰

The northward trend of settlers, within the Illinois Military Tract, followed that on the public lands east of the Illinois River, but the unreserved residual of 1,860,000 acres between the Illinois and Mississippi Rivers were not subject to entry until 1831; as a result, most of the 13,000 settlers in the Military Tract, in 1830, were either squatters or those who had purchased their land from individuals whose titles originally stemmed from military warrants.³¹ Settlers in the extreme south of the Military Tract were mostly from the Southern States and, as settlement progressed northward, the population became a mixture of southern and northern origin, as was similarly the case with respect to the settlement of the Sangamon River country in Illinois, east of the Illinois River within the Kickapoo Cession of 1819.³²

Due to an apparent lack of desire on the part of those holding Military Bounty warrants to settle on these Military Tract lands in Illinois, much of the lands found their way into the hands of speculators through the acquisition of the titles and/or by means of tax titles the State of Illinois issued on tax forfeited lands. These lands became the subject of a large scale speculation during the 1820's and even later.³³ During 1829 most of the population of the Military Tract was located along the Illinois River west of the Sangamon area, in the two counties of Schuyler and Fulton, located along the Illinois River, and along the Mississippi River in the three counties of Pike, Adams and Hancock. The interior counties of the

Military Tract had very few settlers as late as 1830. As a rule, the settlers in the Military Tract area, as elsewhere in the State of Illinois, being interested in agriculture for a livelihood, preferred, to the near exclusion of other lands, those lands in the timber, near the small, quiet streams, that were bordered by small prairies or oak openings.³⁴

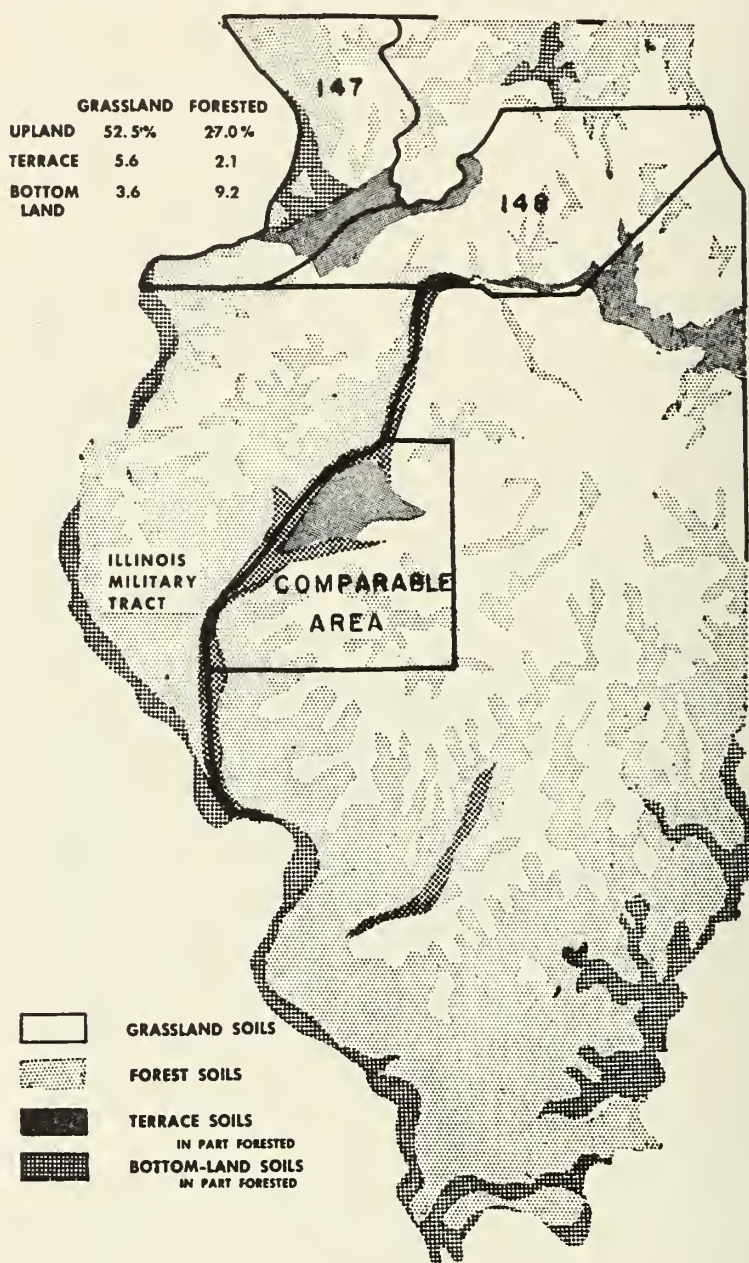


FIGURE 5 - 9 Distribution of Prairie and Forest Soils in Illinois

Source: Redrawn from Carlson, T. L., The Illinois Military Tract, p. 13

²⁸ Ibid. Carlson — p. 7.

²⁹ Ibid. Carlson — p. 6.

³⁰ Ibid. Carlson — p. 25.

³¹ Ibid. Carlson — p. 28.

³² Ibid. Carlson — p. 26.

³³ Chapter 10 in this volume treats in detail with speculative land sales in this area.

³⁴ op. cit. Pooley, 1908 — Settlement of Illinois — Chapter VI.

SETTLEMENT TRENDS AND PREFERENCE FOR LAND

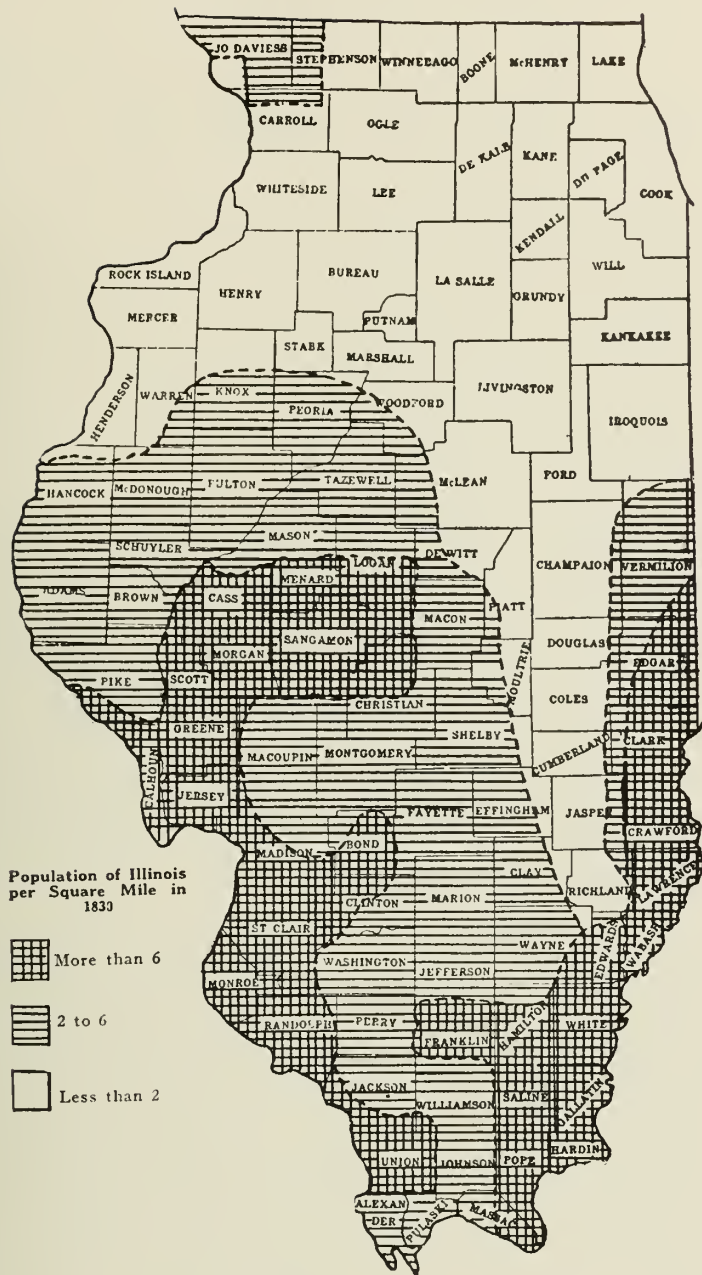


FIGURE 5 - 10 Illinois in 1830
Source: Pease 1919, *The Frontier State*, p. 174

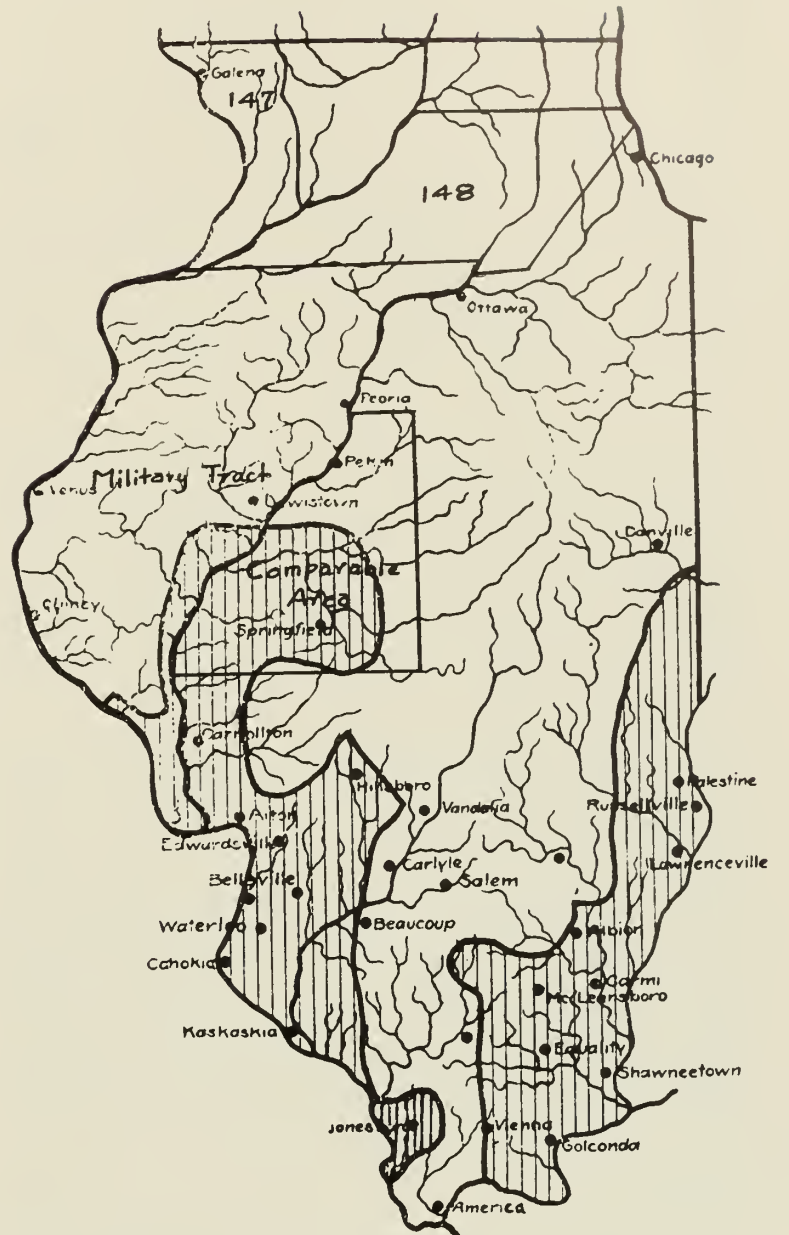


FIGURE 5 - 10(A) Illinois in 1830
Source: Pooley, W. V., *The Settlement of Illinois from 1830 - 1850* p. 314

The pioneer of the Illinois frontier changed his preference for land selections but little before 1830. Practically shut off from the large prairies, he followed the woodlands until the outbreak of the Black Hawk War. The next phase of Illinois settlement was not to come until about 1833, about four years after the evaluation date for the subject property. It was the combination of the ending of the Black Hawk War in 1832 and the opening of steam navigation on the Great Lakes that changed the pattern of settlement in Illinois. A new type of settlers, primarily eastern farmers, migrated to northern Illinois. Nevertheless, the large prairies of Illinois were not settled until the development of railroads, after 1850.³⁵

Accordingly, in 1829 Illinois could only have appeared to a prospective purchaser of the involved tracts of lands in its true light as still a frontier state, with its approximately 36 million acres of lands, largely prairie, sparsely occupied by approximately 157,000 persons. This constituted only about three persons per square mile. An average of two to six persons per square mile was later defined by the Director of Census as "frontier" area.³⁶

In 1829 settled areas in Illinois stretched part way up the east and west boundaries of the State, with a vast unoccupied area of lands lying in between. The "Sangamon" area was the extreme northern extension of the settled area. Above it, to the north, was a vast wilderness unoccupied, except sparsely by Indians and a few outposts, Galena, in the lead region in the northwest corner of the state, and Chicago, a small village located on the southern tip of Lake Michigan.³⁷ Figures 5 - 10 and 5 - 10A show maps of Illinois and its settled area in 1830.

Summary

In 1829 the population of the United States was young and aggressive and moving westward. Up to 1830 it had increased 35% each ten years. In the nine

newer States, lying west of the Appalachian Mountains, the population doubled and almost redoubled in 1820 and 1830, when the census showed 3.6 million persons in these states. In 1830 Illinois was still on the frontier. The southern part of the State was settled first, with settlement gradually moving northward. In the decade 1820-1830, settlers in Illinois found the combinations of hardwood timber land with adjacent small prairies to be the most desirable sites. As a result of the vast offerings for sale of public land, settlers were able to choose only the most desirable sites and population became widely disbursed, thereby creating many problems for development by internal improvements within the new state. By 1830 settlement had reached a little more than half way up the State along both the east and west borders, with a vast uninhabited area in the center.

The northern part of the State was a vast wilderness in which the only settlements were Chicago (Fort Dearborn), with less than 100 persons, and Galena, the center of the lead mining region in Illinois near the Wisconsin border. The gradual south-north movement of settlement in Illinois was not changed until after the close of the Black Hawk War in 1832, which ended the Indian troubles within the state. Thereafter the development of navigation on the Great Lakes brought a new class of settlers to Northern Illinois from the east.

Based on these facts a prospective purchaser in 1829 of Areas 147 and 148 in Northern Illinois and Southwestern Wisconsin would have concluded reasonably that, at some time in the future, there would be a demand for only those portions of the involved lands having timber-prairie combination. However, in this regard he would also have realized that Illinois settlement must follow in slow stages across the newer states to the east, and that considerable time must first elapse in order to permit settlers to reach Illinois and to create a substantial demand for such lands.

³⁵ Ibid. Pooley — pp. 309 - 310.

³⁶ Ibid. Pooley — p. 328.

The total area of available lands in Illinois is officially given as

35,842,560 acres. Rept. Public Land Commission, 58 Congress, 3rd Session. Sen. Doc. 189, March 7, 1904.

³⁷ Ibid. Pooley — p. 328.

Chapter 6

SUPPLY AND DEMAND FOR ILLINOIS LAND TO 1829

As heretofore shown in Chapter 1, the large tracts in Illinois and adjacent Wisconsin, Michigan Territory, comprising the subject areas included various types of land. They contained timber and prairie lands; fertile and sterile lands; lands with level, rolling and rough terrains; lands that were well drained and lands that were swampy; lands that had water and those that did not; lands of superior and lands of inferior locations. Which of these types or which combinations of these types would people buy, and which would they avoid when the land was subdivided into small tracts for resale to settlers? How much of each salable type could be resold to settlers each year, over what period following 1829 could it be sold, and at what price? These are questions to which a prospective buyer must have sought answers in 1829, before estimating the fair price that he could have afforded to pay for the large tracts comprising the subject property. Part of the evidence upon which he could have based his conclusion lay in the previous history of government land sales in Illinois. How much land and what kinds had settlers selected in Illinois prior to 1829, and what types had they consistently avoided purchasing? What was the supply of government land still on the market in Illinois in 1829, and what had been the annual rate of sales both in the United States and Illinois up to August of that year? In the following pages is a review of available historical information on these subjects which it is likely that a prospective purchaser would have considered in informing himself, before acquiring Areas 147 and 148 in 1829.

Public Land Sales to 1829

The sales of government land, as shown on Table 6-A, reveal the heavy acreage sales for purchasing government land, at \$2.00 per acre minimum price on credit, under the system which existed prior to 1820.¹ The evils resulting from this credit system will be more fully discussed in Section III of this volume but, suffice to say, at this point, most settlers obligated themselves to pay for too much land and consequently lost great portions of it. Of the sales of

Table 6 - A

Public Land Sales in United States 1816-1829

Year	Acres in 000's
1816	1742.5
1817	1886.2
1818	3491.0
1819	2968.4
1820	814.0
1821	782.5
1822	710.0
1823	652.1
1824	737.0
1825	999.0
1826	848.1
1827	926.7
1828	965.6
1829	1244.9

Source: Public Land Sales 1800-1860 — Historical Statistics of the United States, 1789 - 1945, Bureau of the Census, U.S. Department of Commerce, Series F 19, p. 120.

Walter R. Kuehnle — 1958

government land made prior to 1820 under this credit act, 4,168,941 acres located in the states of Ohio, Indiana, Illinois, Missouri, Alabama, Louisiana and Michigan Territory were relinquished and the obligations of the purchasers cancelled by 1828. Of this total, approximately 668,000 acres were relinquished in Illinois.² In order to relieve such conditions, arising from the abuses of the credit system of selling public land, as established by the Act of 1800,³ and to promote lagging sales, Congress passed a new act in 1820, abolishing all credit sales and fixing the minimum cash price at \$1.25 per acre for public lands.⁴ Public lands were provided to be, thereafter, sold in "sections, half sections and half quarter sections." This reduction in size of public lands permitted to be sold, formerly fixed at 5,120 acres and 640 acres, respectively, materially increased thereafter the quantities of lands sold. As of July 29, 1829, the minimum cash price, for which public lands of the United States could be sold, as provided by this Act, was \$1.25 per acre.

After the end of the credit system in 1820, public land sales in the United States dropped sharply and

¹ Act of May 10, 1800, 2 Stat. 73 (and amendments).

² American State Papers, 20th Congress, 1st Session, Public Lands, Vol. V, Doc. 678 p. 528. Report of General Land Office, April 17, 1825.

³ Act of May 10, 1800, 2 Stat. 73.

⁴ Act of April 24, 1820, 3 Stat. 566.

the annual sale ranged between the 652,100 acres disposed of during the year of 1823, and 1,244,900 acres of land sold during the year of 1829, as shown in Table 6 - A. The year of 1829 was the first year following the end of the credit system that land sales exceeded the one million acre mark. A prospective purchaser in 1829 would have given great consideration to the record of government land sales, made between 1820 and 1829, in estimating the probable character and extent of existing effective demand for land for settlement, as a basis of a price which he could have afforded to pay for Areas 147 and 148. A qualified prospective purchaser would also have considered the supply of available competitive public lands proclaimed for sale and as yet unsold. Also, he would have noted the rate at which additional lands for settlement were being added to the supply of unsold lands already on the market, as well as the rate and average price at which such lands were being sold. He would also have taken note of population trends, and their relation to past sales of land, in Illinois and elsewhere, in estimating potential future demand and anticipated resales, as already discussed in Chapter 4.

Population Growth vs. Effective Demand

The growth of population in Illinois indicated a strong desire for frontier expansion. The growth from 55,211 in 1820 to 72,817 in 1824 to 157,000 in 1829, suggested a potential land market. The average growth in government land sales in Illinois for the five years 1825 to 1829, inclusive, of roughly 13,000 acres per year, indicated an increasing demand for land. However, the extent and effectiveness of such demand must depend not only on the price asked for the lands but on the financial capacity of this population to pay for them. Therefore, a prospective purchaser in 1829 would have studied not only population trends but also the past record of the land purchases by settlers in Illinois during the same period.

On the evidence of the facts available to him in 1829, a prospective purchaser could not have anticipated that effective demand for land and sales of land to settlers would increase in direct ratio to the growth of population. On this very subject, William Lee D. Ewing, receiver of public money at the Vandalia Land Office, Illinois, wrote contemporaneously, in a report on October 14, 1828, to Honorable George Graham, Commissioner of the General Land Office in Washington, as follows:

Presuming that every fact tending to elucidate this subject will be acceptable, it may not be irrelevant to

state that the sales of land in this country do not increase in an equal ratio with the increase of population, and that the latter affords no just criterion by which any estimate can be formed in relation to the former. The data upon which this position is assumed may be found in the annual receipts of this office, which stand thus:

For the year 1821	\$11,886.20
For the year 1822	2,256.35
For the year 1823	800.00
For the year 1824	767.50
For the year 1825	1,219.20
For the year 1826	1,840.75
For the year 1827	2,175.55
1828, up to June 30	1,386.05

By this statement, taken in connexion (sic) with that made in relation to the present and former population of the district, it appears that the purchasers do not increase in anything like a proportionate ratio with the increase of population.

The reasons for this are two, and obvious to all observers:

First. Many of the emigrants to this section of the State are poor, and unable to purchase land at its present high price.

Second. Many of those who are able refuse to purchase now, believing that Congress will eventually reduce the price to something like a reasonable standard. The citizens of this country are all aware of the discussions that have been had in Congress on the subject of the reduction of the price of those lands. They believe (which is very natural for them to do) that the price should be reduced; and finding, too, that they are supported in this opinion by many of our most enlightened legislators, and believing that efforts will again and again be made until the object be either effected or totally defeated, they will not enter their lands, except in particular instances where places are found to possess some peculiar advantages; but will continue (as they have long done) to cultivate a still stronger faith in an understanding among themselves not to enter each other's improvements, nor to let any one else do it, until government affords them some relief in the shape of the reduction of the price of its lands.⁵

Public Attitude Toward the Land Question

The above quotation rather forcefully calls attention to a factor that in 1829 would have influenced a potential purchaser's estimate of rate of sale, type of land salable and the probable price obtainable for the subject Areas 147 and 148 for resale; i.e., the current public attitude toward the existing \$1.25 minimum government price on public lands. In December of 1824 and again in 1826 the Illinois legislature sent memorials to Congress, reciting the evils of sparse settlement in Illinois and asking for downward graduation of price from the \$1.25 minimum, according

⁵ American State Papers, 20th Congress, 2nd Sess. Public Lands, Vol. V, Doc. No. 685 — C No. 4f, p. 556.

to quality, with donation of lands of the poorest grade in order to relieve the situation created by the great abundance of unsold public lands in that State.⁶

Report of Committee on Public Lands

In February 1828, Mr. Duncan of the (U.S.) Committee on public lands, reported to the House of Representatives:⁷

. . . more than 261,000,000 acres (of lands) lying within the States and Territories, have become the absolute property of U.S., free from Indian claim, since organization of the Government, and that during this time only about 19,000,000 (acres) have been sold to individuals. Thus, in a period of about 40 years, the amount of land sold constitutes the one-thirteenth part of the quantity subject to sale. Calculating upon the future from the past, then, a period of more than five centuries must elapse before the whole public domain of union, now within the unrestrained control of Congress, will become the property of individuals. None but the best lands have been sold . . . (those) of an inferior quality will (not) sell until the best shall have been exhausted . . . nearly 56,000,000 of acres, to which the aborigines yet have title, will, in the course of a few years . . . be added to vast quantity before named, making a total of more than 316 millions of acres . . . the Government can (not) dispose of them in any number of years within our power to enumerate . . . the expenses on account of the public land up to January 1, 1826, including purchases, surveying, and incidental expenses, amounted to almost \$33,000,000; that there had been received in cash a little more than \$31,000,000, showing a (negative) difference of near two millions of dollars between the expenditures and receipts.

At this time the Committee on Public Lands recommended that:

1. Public lands unsold at public sale be first offered at \$1 per acre, and if they still remained unsold the price to be reduced 25¢ per acre each 2 years until sold or reduced to 25¢ per acre.
2. 80 - acre homestead claims be given to such persons as would cultivate and occupy them for 5 years.
3. Lands unsold at 25¢ per acre be ceded to the States in which they lay, for cost of survey and 25¢ per acre.⁸

Within the four states of Illinois, Indiana, Missouri and Ohio there was contained a gross area of 125,860,000 acres of land. As of 1828, 55,829,571 acres of this total acreage, or approximately 44%, had been surveyed, of which, in turn, 13,136,027 acres, or approximately 10%, had been sold. Of the estimated total gross acreage in the State of Illinois of 39,000,000 acres, only 1,403,432 acres had been sold as compared with 19,684,186 acres that had been surveyed. (Table 6 - B.)

Table 6 - B

Statement of the lands of the United States which have been surveyed and sold; which have been surveyed and remain unsold; and the whole quantity of land in the States and Territories.

States and Territories	Quantity Surveyed and Sold (Acres)	Quantity Surveyed and Not Sold (Acres)	Whole quantity of land in the several states & territories, and the quantity not included within their limits, and within the bounds of the United States (Acres)
Ohio	7,488,359	7,734,769	26,000,000
Indiana	3,227,093	10,453,456	21,760,000
Illinois	1,403,482	19,684,186	39,000,000
Missouri	1,017,093	17,957,157	38,400,000
Alabama	3,685,244	16,612,600	32,512,000
Mississippi	1,198,969	6,015,182	29,024,000
Louisiana	153,277	2,679,186	30,540,000
Michigan Territory .	146,320	4,669,890	17,280,000
Arkansas Territory .	26,321	7,229,514	38,000,000
Florida Territory ..	55,689	.....	30,000,000

Source: American State Papers, Public Lands, Vol. V, Doc. No. 639, p. 449

Walter R. Kuehnle — 1958

Senate Resolution for Inventory of Public Lands

Following the receipt of this report, on April 25, 1828, the Senate of the United States directed:⁹

That the President of the United States be requested to cause the registers and receivers of the respective land offices in the different States and Territories, to be directed to make a report to the Commissioner of the General Land Office (in time to be by him laid before the Senate at the commencement of the next stated session of Congress) upon the quantity and quality of the land remaining unsold in their respective districts on June 30, 1828, after having been offered at the minimum price of one dollar and twenty-five cents per acre, so as to show how many acres remain unsold, what proportion thereof (as nearly as can be estimated) consists of first rate land, what proportion consists of land unfit for cultivation, and what is the probable average value of the whole per acre; with such remarks upon the character of said unsold lands, and the length of time they may have been in market under the laws of the United States, or subject to be given away or otherwise disposed of by foreign sovereigns, before they came under the dominion of the United States, as may be necessary to give the Senate a just conception of their present actual value.

Pursuant to this direction, each of the various land offices in the United States reported to the Commissioner of the General Land Office in the latter part of 1828, and these reports from the land offices of Illinois give eloquent expressions of contemporary thinking as to the type of land preferred by settlers, fair sale prices for land in small tracts of 80 to 160 acres, of the quantity and quality, by then contempor-

⁶ op. cit. Boggess, 1908 — Settlement in Illinois, p. 138.

⁷ op. cit. American State Papers, 20th Congress, 1st Session, Public Lands, Vol. V, Doc. No. 639, pp. 447-448.

⁸ Ibid. American State Papers, Vol. V, Doc. 639 — p. 449.

⁹ Ibid. American State Papers Vol. V, Doc. 685 — p. 538.

APPRAISAL OF ROYCE AREAS 147 AND 148

ary standards, of the available lands remaining unsold; and of the anticipated rate at which it could be assumed that such lands would be absorbed by the market. On December 9, 1828, on receipt of these reports from the various land offices in the United States, the Commissioner of the General Land Office made his report to the Senate of the United States, in compliance with their resolution of April 28, 1828.¹⁰ Included in this report were those from the six Illinois land offices of Kaskaskia, Shawneetown, Edwardsville, Vandalia, Palestine and Springfield.¹¹ These reports clearly tell us that, despite growth of population, additions to the market of public lands in Illinois had for years been exceeding demand at the government price of \$1.25 per acre.

The character of the lands in Illinois remaining unsold in 1828, as well as the length of time these lands had been on the market, tells something

about the intensity of that demand. At the older Edwardsville Land Office in Illinois, for example, about 118,500 acres of first-rate land proclaimed for sale, between 1816 and 1823, remained unsold in June 1828 (see Table 6 - C). In the Vandalia and Palestine Land Offices of Illinois 936,000 and 499,000 acres, respectively, of first-rate¹² land had been proclaimed for sale for at least six years prior to 1828. Even at the Springfield Land Office, in the very popular Sangamon area, there were 212,620 acres of offered and unsold first - rate land, which had been on the market, at the maximum price of \$1.25 per acre, from one to four years, and was still available by mid-1828 (Table 6 - D). Through the years 1828 and 1829, substantial amounts of additional public lands were proclaimed for sale, adding substantially to the supply of unsold land in Illinois and within the Springfield Land Office area.

Table 6 - C

Characteristics of Unsold Land in Edwardsville Land Office, Ill. June 30, 1828

Land on Market Since

	1816 and Earlier	1819	1820	1821	1823	Total
Unsold Lands Total Acres	797,921	531,682	922,511	269,272	267,419	2,788,805 *
Acres 1st Rate Lands	25,111	20,585	34,685	19,039	19,051	118,471 **
% 1st Rate Lands	21.0%	17.8%	29.2%	16.0%	16.0%	100.0%

Source: Calculated from a report by William P. McKee, Register, and James Mason, Receiver, Edwardsville Land Office to the Commissioner of the General Land Office November 13, 1828, shown in American State Papers, Public Lands, Vol. V, Doc. No. 685, "Quantity and Quality of Unsold Lands," Report of the Commissioner of the General Land Office, pp. 550-3.

* The figure of original report was 2,788,827.28 acres

** The figure of original report was 118,468.84 acres

Walter R. Kuehnle — 1958

Table 6-D
Characteristics of Sold and Unsold Land in Three Illinois Land Offices
June 30, 1828

Land Offices	Years Entered for Public Sales and Acres Offered							Total Acres Offered	Acres Sold before June, 1828	Unsold Land Available for Purchase	
	1820	1821	1822	1823	1824	1826	1827			Total Acres	Acres 1st Rate
Vandalia*	898,560	737,280	760,320				414,720	2,810,880	17,586	2,793,294	931,098
Palestine**	645,960		1,724,380		120,190		75,470	2,566,000	70,000	2,496,000	499,200
Springfield**				531,143	531,143	531,143	531,144	2,124,573	177,248	1,947,325	212,620

Sources: Calculated from estimates in the Land Office Reports shown on American State Papers, Vol. 5, "Quantity and Quality of Land Unsold," Doc. 685, pp. 554-8 and Vol. 6, "Statement of the Quantity of Land Sold at Each of the Land Offices of the United States from July 1, 1820 to December 31, 1832," p. 629.

* Based on the data of the Report of Register of Vandalia Land office; Oct. 23, 1828.

** Calculated from both Reports of American State Papers, Public Lands, Vol. 5, P. 557 and Vol. 6, P. 629.

¹⁰ Ibid. American State Papers, Vol. V, Doc. 685 — p. 538.

¹¹ Ibid. American State Papers, Vol. V, Doc. 678 (c - 1 to c - 6, incl.), pp. 550 - 557.

On Figure 5 - 8 Chapter 5, a map of Illinois shows the area included within each of these land offices.

¹² In their 1828 reports to the Commissioner of the General Land Offices regarding the "quality" of the land, the four Illinois land offices reporting variously use the terms first, second or third "rate" or "class" land.

SUPPLY AND DEMAND FOR ILLINOIS LAND TO 1829

Significance of the Supply of Land for Settlement

A prospective purchaser of the subject property, contemplating its purchase for resale, would have considered the amount of competitive land then available in Illinois and elsewhere, together with potential new additions, to compete with Areas 147 and 148. This abundance of available land was not limited to Illinois. In 1828 in the four adjoining public land states of Illinois, Indiana, Missouri and Ohio, there were 54,210,881 acres of scattered lands available for purchase from established Government land offices (Table 6 - E). Of this total acreage of 54,210,881

Table 6 - E

Public Land Subject to Entry Remaining Unsold
(By States) June 30, 1828

State	Total Acres	Acres First-Rate Land	% First-Rate Land
Ohio	7,196,256	200,000	2.8%
Indiana	10,245,625	1,470,000	14.3%
Illinois	13,195,000	2,935,000	22.2%
Missouri	13,574,000	159,000	1.2%
TOTAL	54,210,881	4,764,000	8.8%

Source: American State Papers, Public Lands, Vol. V, Doc. 700, p. 595.

Walter R. Kuehnle — 1958

acres, 4,764,000 acres were estimated by the General Land Office to be first - rate land and the most likely to be sold first. In Illinois, of 13,200,000 acres of land that were proclaimed and unsold up to June 30, 1828, approximately 3,000,000 acres were classified by the official Land Office Report to Congress in 1828, as first-rate (Table 6 - F). Of this total, about 1,700,000 acres were located in the areas considered most desirable at the time: i.e. within the Edwardsville, Vandalia, Palestine, Springfield land office districts, not counting a probable 500,000 acres of similar lands privately offered in the Military Tract. These available sites, together with additional future proclamations of public lands, would have been considered, in 1829, as highly competitive with any contemplated subsequent offerings of sites to settlers in Areas 147 and 148.

Quantity of Land Sold in Illinois Prior to 1829

The Illinois Land Offices, in which the largest number of acres of public land was sold during the 1820's, were located at Edwardsville, Palestine and

Table 6 - F

Land Available for Purchase in Illinois
June 30, 1828 to January 1, 1829

Land Office	Acres Offered		Acres Sold	
	Total	1st Rate	Ave. Annual Sales 1823-28	Sales in 1828
Kaskaskia	1,480,000	—	1,726	3,416
Shawneetown	2,689,000	1,195,000	2,472	4,513
Edwardsville	2,788,000	118,000	9,388	18,829
Vandalia	2,793,000	900,000	1,493	3,592
Palestine	2,496,000	500,000	12,181	20,537
Springfield	1,947,000	212,000	37,092	45,206
Total of 6				
Land Offices	13,195,000	2,935,000	64,352	96,093
Military Bounty				
Lands	1,500,000*	500,000**		
Total Illinois	14,695,000	3,435,000		

Sources: American State Papers, Public Lands, Vol. V, Doc. No. 700, pp. 595-6 and Public Lands, Vol. VI, p. 629.

* A conservative estimate of lands for sale by speculators and land available from tax sales on June 30, 1829. See Carlson, T, 1951, The Illinois Military Tract, University of Illinois Press, Urbana, Chapters III and IV.

** A fair estimate of the first-rate land drawn from Carlson description, Chapter II, and a comparison of the area with land office reports for neighboring areas and their allowances for first-rate land.

Walter R. Kuehnle — 1958

Springfield. While these land offices changed their boundaries from time to time, the areas included in 1829, within each, are shown by Figure 5 - 6.¹³ In 1829 the lands of the Springfield Land Office, which included the Sangamon River area, were considered most desirable and this area was the most popular place of settlement in Illinois. Between 1823 and 1829 the sales at this office accounted for more than half of the public land sales in the State of Illinois. For the years 1828 and 1829 sales in this land office were still almost half of the total land office sales in Illinois (Table 6 - G). This demonstrates the area of greatest sales interest in Illinois to 1829. A study of sales in this area, the results of which are shown in Chapter 8, indicates the type of land preferred by contemporary purchasers in 1829. By again referring to both Tables 6 - F and 6 - G, it can be seen that the sale of public land in Illinois reached its high point in 1829, with sales totaling only 196,000 acres, in spite of an abundant supply.¹⁴

No prudent prospective purchaser would have made a projection, in 1829, of probable future sales of acreage in Illinois, without reviewing the history

¹³ Chapter 5.

¹⁴ A great deal more Illinois public land acreage was added to the supply as more land was surveyed and proclaimed for sale, and on December 31, 1831 there were still 15,302,239 acres of land, exclusive of the Military Tract, in Illinois unsold and

subject to private entry, as compared with 13,195,000 acres on June 30, 1828 (Table 6 - E).

Ibid. American State Papers, Public Lands, Vol. VII, Doc. 1270 — p. 531 Table B.

64

Land offices	Half year of 1820												Totals in each district, State, and Territory.					
	1821.	1822.	1823.	1824.	1825.	1826.	1827.	1828.	1829.	1830.	1831.	1832.						
OHIO																		
Marietta.....	Acres. 1,413.01	Acres. 2,868.57	Acres. 1,589.48	Acres. 9,698.57	Acres. 12,700.97	Acres. 12,111.53	Acres. 7,524.51	Acres. 8,525.92	Acres. 7,574.23	Acres. 9,656.54	Acres. 15,675.66	Acres. 25,180.71	Acres. 115,610.06					
Zanesville.....	7,739.37	14,899.37	11,012.46	24,215.84	25,790.32	29,314.21	29,810.69	37,019.56	37,619.67	33,894.91	71,064.41	88,132.33	280,953.02					
Sreubenville.....	2,860.20	15,176.88	17,143.56	29,063.91	21,025.44	28,894.55	25,003.98	28,013.47	28,095.91	18,318.91	26,398.56	19,149.96	281,966.71					
Chillicothe.....	1,855.15	4,956.59	8,910.94	16,183.81	19,723.71	13,366.44	10,285.96	15,074.93	19,585.52	15,880.03	31,976.29	57,020.83	222,214.25					
Cincinnati.....	3,542.49	6,729.28	4,389.84	27,856.91	16,359.00	10,625.12	24,389.00	28,303.82	35,477.99	26,475.96	110,650.80	49,610.92	350,322.85					
Waoater.....	3,460.99	13,009.23	15,051.33	30,098.58	17,994.76	16,128.25	17,030.89	14,186.45	21,664.32	18,857.98	28,061.68	32,271.68	246,847.25					
Piqua.....	3,679.80	11,042.10	4,011.90	27,415.06	5,325.79	2,383.82	2,451.54	2,323.62	2,405.57	2,872.01	7,363.21	40,126.56	89,888.03					
Tiffin.....	20,366.74	60,874.86	60,162.92	27,219.31	23,012.62	20,965.10	34,506.74	32,345.60	23,793.19	30,436.36	44,202.03	101,221.62	581,965.51					
INDIANA																		
Jeffersonville.....	39,580.30	22,972.49	14,656.73	5,244.44	11,313.34	5,943.25	10,720.74	14,095.16	10,486.11	20,861.03	17,716.82	49,252.37	299,188.14					
Vincennes.....	7,603.23	23,045.92	15,777.20	10,725.79	12,283.52	13,368.04	14,017.71	18,401.04	26,495.34	31,441.56	73,839.12	62,606.06	322,759.18					
Indianapolis.....	96,367.88	200,913.64	149,335.26	86,619.48	60,683.23	52,644.07	71,167.35	66,024.24	67,457.84	89,861.94	112,503.89	156,815.68	1,374,358.83					
Crawfordsville.....	18,939.41	17,646.33	73,213.15	58,722.40	69,203.40	86,912.17	103,106.92	113,341.85	153,354.57	203,049.48	291,387.89	222,033.47	1,595,611.75					
Fort Wayne.....				3,734.58	1,075.02	3,403.18	2,041.06	2,212.25	1,113.25	6,259.72	23,301.69	52,496.14	154,864.67					
ILLINOIS																		
Shawneetown.....	2,392.74	3,329.61	2,050.12	1,253.63	2,278.66	1,357.63	3,340.57	4,512.91	8,143.78	7,720.61	20,523.12	17,624.82	76,615.07					
Kaskaskia.....	1,658.10	1,627.50	1,661.41	793.00	1,278.28	711.22	2,256.54	3,415.72	6,380.57	5,000.92	11,186.33	17,417.38	55,288.25					
Edwardsville.....	2,649.15	35,243.66	5,373.22	11,223.99	5,541.30	5,748.43	8,398.66	18,829.17	28,602.10	80,020.46	100,350.46	80,713.19	389,278.72					
Vandalia.....		9,227.37	2,205.08	640.00	614.00	895.36	1,472.61	2,591.77	19,405.48	35,362.69	43,174.35	8,021.33	126,353.59					
Palestine.....		954.01	16,474.01	7,903.87	11,936.63	10,323.76	12,915.63	9,466.69	27,221.45	86,413.93	54,872.82	23,773.26	302,793.28					
Springfield.....				38,720.28	22,339.10	26,767.88	56,122.41	33,398.97	45,206.12	101,933.19	99,496.44	59,996.32	570,473.06					
Danville.....											9,647.92	18,710.96	28,358.88					

Source: American State Papers, Vol. 6, Public Lands, p.629

of the pattern of land sales in Ohio, Illinois, Missouri and Indiana (Table 6 - G). Illinois sales lagged behind those of the adjoining States from 1822 to 1828, but jumped to second place with sales of 196,245 acres in 1829. A further study of Table 6 - G showing historical sales of government land discloses that between 1820 and 1828 sales had never exceeded 200,000 acres per year in Ohio and had only reached 250,000 acres per year in Indiana by the year of 1828. As in Illinois, sales in these States were much higher by 1831, but the record of previous years' sales would not have justified a belief that such a sales level could have been anticipated as of July 29, 1829.

Accordingly, considering the history of public land sales in Illinois against the general and economic background of the period, as has been outlined on preceding pages, a prospective 1829 buyer might have reasonably concluded that the total demand for Illinois lands in the foreseeable future would absorb as much as 200,000 to 300,000 acres of land per year. However, such a person would have realized that this market must be shared among all of those interests, government or private, offering for sale the types of land that were acceptable to Illinois settlers at that time.

Types of Land Salable in 1829

The 1828 Report to Congress, with reference to the classes of Illinois land then in demand, presented through the Commissioner of the General Land Office in Washington by William Lee D. Ewing of the Vandalia Land Office, is the clearest and most informative of the six Illinois Land Office reports made that year.¹⁵ In his Report to the Commissioner of the General Land Office, Mr. Ewing divided the land within the Vandalia Land Office area into four classes, as follows:

1. The first class, being one fifth of the whole quantity, is first-rate land, combining fertility of soil with the conveniences of wood and water. A small part of this is alluvial bottom and woodland, and the residue rich dry prairie, with a soil of from one to four feet in depth, containing and bordered by timber.¹⁶

The greater part of this class of land lies in the counties of Shelby, with its attached part, Tazewell, where the lands have not yet been brought into market; Lafayette, with some portions of Clay and Marion; those parts of Lawrence, Clark, Edgar, and Vermillion, embraced in the district, (with an occasional exception,) are prairie, which it is impracticable to cultivate, on account of the remoteness of timber and the want of water.

2. The second class, being two-fifths of the whole quantity, is second rate, being good arable land, but inferior to the first class in the fertility of the soil and advantages of situation. This is the lowest calculation for this class of land, there being much of it in the district as I have ascertained from actual inspection.

3. The third class, being one-fifth of the whole quantity, is entirely unsalable, and of no present value, although it includes many tracts which may eventually become valuable. This, however, depends upon contingency — the progress of population and the increase of wealth. This class is composed chiefly of prairie, lying so remote from timber and water as to be unfit for occupation. Some of this land is poor, and will ever remain valueless; a large portion, however, is rich and admirably adapted to tillage, and may become desirable to the farmer at a period remote from the present, when it shall be guarded from the fires of the autumn, and become overgrown with useful forest timber; when the enterprising occupant shall be satisfied with such water as can be had by digging, and when, in the progress of improvements, our farmers shall be able to command the means of bringing a permanent supply of that element to the surface. At present it will not sell, nor would it be accepted in donation, on the condition of actual settlement. The public domain is vast in extent, and possesses all the advantages of fertility and locality. The poor but enterprising emigrant is not confined in search of a home for his family, and soil to cultivate for their support, to the narrow limits of a single district or State, but he has all the west before him; a country affording more inducements to the hardy and industrious husbandman than all the others that I have any knowledge of. Having it then in his power to select and occupy the very best tracts of land without any fear of molestation, he would reject a proffered donation at the hands of the government, of a tract producing this class of lands.

The inundated bottom lands are also included in this class. They are only valuable for their timber, some of which is fine, but are rarely purchased on account of that single advantage, inasmuch as it generally lies too far distant from the arable prairie lands for the common uses of husbandry. The soil is in many places of excellent quality, but will not sell until the country becomes densely settled, and a sufficient surplus wealth exists to enable the inhabitant to embank and reclaim it.

A few other situations might be pointed out, in which land intrinsically good, as respects mere fertility, is rendered totally useless by countervailing causes, and which will lie waste until all the better tracts shall be occupied, and the excess of population or scarcity of land shall render it an object with enterprising men to overcome the disadvantages of nature by ingenuity and labor.

Of the whole of this class, therefore, it may be said that it is at present unsalable and of no value; and that it will so remain during a period to which no reasonable foresight can fix a termination.

¹⁵ Ibid. American State Papers Vol. V, Doc. 685 — p. 555.

¹⁶ Note the limitation of this class to "dry" prairie bordered

by timber.

4. The fourth class, the remaining one - fifth, is good for nothing, being sterile and unfit for tillage, or subject to disadvantages which time, labor, nor ingenuity can remove.¹⁷

From this report and other available information, a prospective 1829 purchaser would have been aware that not all lands in Illinois were salable to settlers. To be salable they must have had certain qualities. They must have been fertile and well-drained land with the advantages of location and a proper proportion of timber and prairie. A distance of more than a half-mile from timber was considered as an intolerable burden.¹⁸

Summary

A prospective 1829 purchaser of Areas 147 and 148 would have obtained many facts before buying Areas 147 and 148. He would have obtained such facts useful to him in estimating the price that he would have been warranted in paying for such lands. He would quickly have discovered that competitive lands, both in Illinois and elsewhere, were plentiful, with the supply constantly being increased, and far exceeding any demand foreseeable as of July 29, 1829. He would also have known that the public domain was vast in extent, and that the enterprising settler in 1829 was not confined to the narrow limits of a single district, or even of a single State, in his search of a suitable home. Having it within their power to occupy only the best tracts of land at the minimum price of \$1.25 per acre, settlers were selective in their purchases, buying only those combining the advantages of timber, fertile well - drained soil, water and a desirable location. Prairie lands, even if fertile, when distant from timber, were considered unfit for occupation by settlers, and in 1829, such lands did not have prospects for resale within the foreseeable future.

In 1829 a prospective purchaser would also have been concerned with the attitude expressed both by citizens and by public officials, who currently were favoring the downward graduation of the price of public lands from \$1.25 per acre to as low as 25 cents per acre for all lands on the market two years or more. This constituted a demoralizing threat to the foreseeable future market price of Illinois lands as of 1829. In the face of the large supply of unsold Illinois lands, the minimum price of government land was an artificial one supported above its actual value only by a federal statute (1820). Only as long as the government maintained this minimum price could it be anticipated as a base for private sales. Based on the facts in 1829, a prospective purchaser of Areas 147 and 148 could only have considered it a maximum resale price to settlers for its more desirable settlement sites.

Based on past population trends and sales history, a prospective 1829 purchaser could have been warranted in anticipating that, as of 1829 and thereafter, total land sales in Illinois would stabilize at between 200,000 and 300,000 acres per year within the foreseeable future as compared with 196,000 acres in 1829. Of these annual Illinois sales a total of about 100,000 acres could reasonably have been imputed to sales in the subject areas when, in the progress of events and settlement after 1829, they became salable.

In order to test the opinions and conclusions stated in this chapter, and to establish more precisely the land categories of settler preference, the actual sales of (1) 316,080 acres of public lands between 1823 and 1829 in the Springfield Land Office, east of the Illinois River and as it existed in 1829, (2) the sales of Illinois - Michigan canal lands in 1830, and (3) the 1829 private land sales in the Illinois Military Tract have each been analyzed in the following section III of this volume.

¹⁷ A study of sales of government land in the Springfield Land Office, 1823 - 1829, confirms Ewing's above statement as to the relative desirability of these four classifications of land. The results of this study appear in Chapter 8.

¹⁸ Shireff, Patrick, 1835 — *A Tour Through North America; Together with a Comprehensive View of Canada and the United States, as Adapted for Agricultural Emigration*,—Edinburgh, p. 250.

III. STUDY OF CONTEMPORARY SALES AND CONSUMERS' PREFERENCE TO 1830

Chapter 7

HISTORY AND SIGNIFICANCE OF SALES OF GOVERNMENT LAND

In estimating the fair market value at which to either sell or buy lands in 1829, such as the subject areas in Illinois and Wisconsin, both the seller and the prospective purchaser must have had one of two logical bases for their conclusions: (1) the prices previously paid for similar large tracts of land by other purchasers either for speculation or for development and resale; or (2) the price at which a typical well-informed purchaser of that time would have been warranted in purchasing such a large tract based upon (a) prices that had been paid for other properties, large and small; (b) contemporary opinion of value by other informed persons; (c) estimated prices at which the property could be resold in small tracts, such as those being sold on government lands; (d) how soon and at what rate the property could be resold. Because the government had been the principal vendor of frontier lands in Illinois and elsewhere, the history of its experience in the sale of public lands would have been significant and indicative to a prospective purchaser of the subject areas.

A prospective purchaser for the subject areas would have been familiar with the history of the efforts of the government, up to 1829, to sell its vast domain of public lands. Pertinent to the relevant information, required by such a purchaser, would have been the knowledge of: (1) large sales of public lands in tracts of millions of acres prior to 1800; (2) the efforts of the Government to sell more land by offering it in small tracts on credit at \$2.00 per acre between 1800 and 1820; and (3) as a result of widespread defaults by credit purchasers, the repeal of the credit system and establishment of a \$1.25 minimum price in 1820. Such a prospective purchaser would also have known that sales of government land dropped sharply after the establishment of the cash system in 1820. Settlers selected only the best tracts, leaving widely unsettled areas between, thus creating difficult problems of internal improvements for the Federal and State Governments. He would have known that the problems presented by vast amounts of unsold Government lands caused Congress in 1828 to request a report from each land office, including

those in Illinois, stating the quantity, quality and value of all unsold lands.

The following pages of this chapter relate to the history and prices of public lands in the United States and Illinois prior to 1829, and to the official opinions of the value of the unsold public lands in Illinois made by those in charge of the respective land offices as of 1828.

Public Land Policies Prior to 1800

Public lands were first sold by the United States under the Land Ordinance Act of May 20, 1785, by which Congress fixed their sale price at \$1.00 per acre. Previously the states had ceded all lands to the new Federal Government for the purpose of raising money to pay their outstanding Revolutionary War debts. Public lands were first surveyed into townships of six miles square and then offered for sale, part in entire townships (23,040 acres) and part in entire sections (640 acres), at not less than \$1.00 per acre in specie or evidence of value of public debt. However, the actual cash cost to the buyer was much less than the stipulated \$1 per acre, as this ordinance permitted the use of Revolutionary War military bounty warrants for one - seventh of total land purchased, and of certified evidence of public debt which were much depreciated in value at the time in payment of lands. One-seventh of the area was to be selected by lot for military bounty warrants for the continental army.¹ Auction sales for the first year were slow. No entire townships were disposed of and up to October 1787, only 72,974 acres were sold. After credit for forfeitures, net receipts realized from all sales were only \$117,108.²

Large Tract Land Sales 1787-1795

In 1787 the Ohio Company contracted to purchase 1,500,000 acres, and the Scioto Company 5,000,000 acres, of public domain, between the Ohio and the Scioto rivers.³ This transaction was ultimately resolved at 964,000 acres of land at \$500,000. In 1788 John Cleves Symes contracted to purchase 1,000,000 acres of Ohio lands. On the purchase price of 66⅔

¹ Journals of the Continental Congress, Vol. 28, pp. 375-381.

² Hibbard, Benjamin Horace, 1924 — A History of the Public Land Policies, Macmillan Company, N.Y., pp. 41-42.

³ Treat, Payson Jackson, 1910 — The National Land System 1785 - 1820, E. B. Treat & Company, N.Y., pp. 50 - 52.

cents per acre he paid \$82,198, one-seventh in military warrants. However, the specified boundaries did not contain the estimated area and he was finally given patents on 248,540 acres, for which the government received \$70,455.⁴ It has been estimated by historians that, on the basis of the depreciated value in specie of land warrants and certificates of public debt, the actual cost of these Ohio lands to the purchasers was between 8 and 15 cents per acre.⁵

In 1788 the State of Massachusetts assumed ownership (subject to the extinguishment of Indian title) of a vast tract of land in the present State of New York lying west of a line from the Pennsylvania border, north through Lake Seneca to Lake Ontario, containing more than 6,000,000 acres. In 1788 Phelps and Gorham contracted to buy the tract for \$1,000,000 in Massachusetts script, then worth 30 cents on the dollar. They completed their purchase for only two-thirds of the tract, or 2,600,000 acres. In 1791 Robert Morris purchased the remainder of the 6,000,000 acres from the state of Massachusetts — 4,000,000 acres for 45,000 pounds in Massachusetts currency (\$200,000), or about 5 cents per acre. Resales of this Massachusetts tract were 1,200,000 acres of the original Phelps purchase to Robert Morris for 30,000 pounds (\$133,000), or 11 cents per acre, who again resold in 1791 to Sir William Johnson Pulteney for 75,000 pounds (\$333,000), or 28 cents per acre.⁶

Morris undertook to extinguish the Indian title and sold to the Holland Company 1,500,000 acres at \$550,000, or 37 cents per acre, and 1,800,000 acres at \$515,000, or 28 cents per acre.⁷

In 1795, the State of Connecticut sold its "Western Reserve" (Ohio lands west of Pennsylvania, between Latitude 41° and 42°2' north), believed to contain 4,000,000 acres but later revealed to be only 3,000,000 acres, to a group of 57 men organized as 35 purchasers. Bids ranged from \$1,000,000 to \$1,250,000. First sale price was \$1,200,000 or approximately 40 cents per acre.⁸ This tract was subdivided and the standard resale price was \$1.00 per acre. Later some city lots sold higher as did other parts of the reserve, after the great rush for Connecticut began.⁹ This was the last large area purchase by land speculators. These large land purchases, while made

thirty-five years or more prior to 1829, serve to illustrate the well established fact that, when lands were sold in large lots, the price was far less than that brought by current or subsequent sales of small units. During the period 1787 - 1796 only approximately 1.5 million acres of the public domain had been sold by the United States and revenues for such sales were not proceeding as anticipated.¹⁰ In fact, these land sales had been a disappointment as a source of income and in meeting the anticipated revenues of the government which were achieved only because customs revenue, which made up the deficiency, was to far outstrip land sales revenue as a source of funds for the Federal Government.¹¹

Land speculation had reached its zenith soon after the establishment of the new government under the Constitution, but at the beginning of the 19th century public interest in land speculation had greatly subsided. For many years statesmen and financiers would not associate themselves with wild schemers of land development because of popular contempt for land speculators and because new fields of speculative endeavor, in the form of commodities and securities, came into vogue.¹²

In the period prior to 1800, methods by which land sales could be stimulated were a subject of lively discussion, and in 1790 Alexander Hamilton made his famous report on "Plan for Disposing of Public Lands". This report recommended sale to (1) individuals of large tracts for resale; (2) associations for settlement; (3) individual settlers (not exceeding 100 acres). The price was to be 30 cents per acre, gold, silver or public securities; the secretary recommended against any purchase less than an entire township with credit for not more than two years and security other than the land sold.¹³

Lacking a market for large area purchasers, ideas began to turn toward "retailing" the land directly to purchasers of small units. In other words, the United States assumed the position of a businessman in the matter of retailing lands. Its experience in the sales of such small units then must constitute an indication of the results that could have been anticipated by any prudent investor purchasing large tracts for resale in small tracts at a profit.

⁴ American State Papers, Class XIII, Public Lands, Vol. 3, 16th Congress, 2nd Session, No. 323, Schedule C. p. 459.

⁵ Sakolski, A.M., 1932 — *The Great American Land Bubble*, Harper & Brothers, Publishers, N.Y. and London, pp. 55 - 59.

⁶ Ibid. Sakolski, pp. 55 - 59.

⁷ Evans, Paul Demund, 1924 — *The Holland Land Company*, Buffalo Historical Society Publications, Buffalo, pp. 26 - 28.

⁸ op. cit. Sakolski, 1932 — *Great American Land Bubble*, pp. 120 - 122.

⁹ Western Reserve Historical Society Publications, Tract 96.

¹⁰ op. cit. Sakolski, 1932 — *Great American Land Bubble*, p. 53. op. cit. American State Papers, Public Lands, Vol. 3, p. 459.

¹¹ op. cit. U.S. Department of Commerce, *Historical Statistics of United States 1789 - 1945* — Series p. 89-98, page 297.

¹² op. cit. Sakolski, 1932 — *Great American Land Bubble*, p. 53.

¹³ op. cit. American State Papers, Public Lands, Vol. 1, pp. 4-5. Report of Alexander Hamilton, Secretary of Treasury, July 20, 1790.

HISTORY AND SIGNIFICANCE OF SALES OF GOVERNMENT LAND

After the extinguishment of the claim of Indian title to 25,000 square miles of lands in southern Ohio, in 1795, by the Treaty of Greenville, Congress passed a law establishing the territory northwest of the Ohio River and above the mouth of the Kentucky River. The area was to be divided into townships, half of which were divided into 640 acre sections and half into quarter townships (nine sections). Sales were to be at public auction, with a minimum price of \$2.00 per acre, 5% cash at time of sale, 45% within 30 days, and balance in one year. Ten per cent discount was to be granted for cash. The minimum size tract was to be one section. Less than 50,000 acres were sold under this program from 1796 to 1800.¹⁴

Public Land Policies 1800-1820

As all of its efforts had not solved the land disposal problem either to the satisfaction of the United States as an item of revenue produced or to the satisfaction of the settler, Congress continued to seek a better solution to the disposal of the public domain. Accordingly, in 1800 the land law was amended to extend credit to land purchasers. Land was to be offered at auction in sections and half sections. Minimum price was to be \$2.00 in specie or in evidence of public debt, one-fourth cash and one-fourth within two, three, four years with interest at 6% per annum. 8% discount was allowed for cash, establishing the cash price of public land at a minimum of \$1.64 per acre.¹⁵

In 1804 this act was amended to provide, in general, that all public lands in the United States be offered first in quarter townships, then in sections, and finally in half and quarter sections. Interest on future installments, due on land sold, were to be waived if payment was made on time. This amendment was a compromise, offering both large and small tracts and easy credit. Both speculator and settler apparently believed that they could realize enough from sale or use of the land to liquidate the payments. Actually this was not realized and soon

there was large scale default of payments. Relief act upon relief act, at least 18 in number, were passed by Congress.¹⁶ These relief measures enacted by Congress for the relief of the distressed purchasers of public lands, on credit, consisted largely of extensions of time within which to make payments, waivers of delinquent sums due from purchasers, interest on unpaid balances and the grants of the privileges of repossession to defaulting purchasers of forfeited lands within certain time limitations.¹⁷

In spite of the liberality of Congress, in enacting these relief measures for purchasers on credit sales made prior to the establishment of the minimum cash price of \$1.25 per acre in 1820, much of the public land sold on credit, at \$2.00 per acre under the 1800 statute, was not paid for. As early as 1809 the Committee on Public Lands stated that the amount owed on public lands had increased to over \$2,000,000 and recommended abolition of the credit system.¹⁸ In 1818 the Committee on Public Lands pointed out that approximately 8 million acres of land had been sold by the Federal Government in eight years and stated that:

It felt somewhat apprehensive that the United States so far from being enabled to increase, will find themselves compelled to lessen the price of public lands or to forego the golden dreams they indulged in, of the economic revenue, to arrive at their sales.

Hibbard notes that after the War of 1812 the country was flooded with depreciated bank notes and the government accepted them as payment on land until 1817 when specie was demanded.²⁰

In 1819 the Committee on Public Lands recommended the elimination of credit and the reduction of the price to \$1.50 per acre. Significantly the committee noted

It is not apprehended that speculations would be extensive or long continued where it must be carried on by purchase for cash and sale on credit; and when the sales must be confined to those who cannot advance \$120 and to become purchasers from the U.S.²¹

¹⁴ op. cit. Hibbard, 1924 — History of Public Land Policies, p. 68. Act of May 18, 1796, 1 Stat. 464.

¹⁵ Act of May 10, 1800 — 2 Stat. 73.

¹⁶ 2 Stat. 378, April 15, 1806.

¹⁷ Such relief measures, enacted by Congress were as follows:

Acts	Statute	Page
March 2, 1809	2	533
April 30, 1810	2	591
December 12, 1811	2	688
April 23, 1812	2	712
July 6, 1812	2	782
February 19, 1814	3	97
February 4, 1815	3	201
April 24, 1816	3	300
April 18, 1818	3	433
March 30, 1820	3	555
March 2, 1821	3	612

Acts	Statute	Page
April 20, 1822	3	665
March 3, 1823	3	781
May 18, 1824	4	24
May 26, 1824	4	60
May 4, 1826	4	158
May 23, 1828	4	286

A further relief act was passed by Congress July 9, 1832, 4 Stat. 567.

¹⁸ op. cit. American State Papers, Public Lands, Vol. 1, pp. 825 - 826.

¹⁹ Ibid. American State Papers, Public Lands, Vol. 3, pp. 300-301.

²⁰ op. cit. Hibbard, 1924 — History of Public Land Policies, p. 90.

²¹ op. cit. American State Papers, Public Lands, Vol. 3, pp. 413 - 414.

APPRAISAL OF ROYCE AREAS 147 AND 148

Meanwhile, land sales from 1796 to June 30, 1820 were to aggregate 13,647,536 acres for \$27,900,000.²² The requirement of specie on land payments and the 1819 panic, now under way, added up to a crisis in the land problem. Boggess states that, in 1819, there was more than \$10,000,000 due the government from land purchasers in the old Northwest Territory.²³ As of April 21, 1828, the government had been required to accept relinquishments from such credit purchasers of United States public lands at the \$2.00 per acre credit price for more than 4,000,000 acres, cancelling obligations from such defaulting purchasers of almost 14 million dollars. Of this total land, approximately 58% was located in the states of Illinois, Ohio, Indiana and Missouri. Illinois, a new state, was responsible for relinquishment of almost 650,000 acres, cancelling defaulted obligations of over \$1,300,000. (See Table 7-A). By 1834 over six million acres

measures, caused Congress to face up to the failure of the credit plan by abolishing it and passing a new law establishing a cash sale price for government land.²⁵ The new law required a cash minimum bid of \$1.25 per acre, and subsequent to this change, there was a great decline in the sale of public land in the United States. As has been previously demonstrated, the market supply of desirable land greatly exceeded the demand, and settlers purchased only the best parcels. This created many problems for State and Federal Government through the resulting scattering of settlement. In 1829 good government land in Illinois was available at the minimum bid price of \$1.25 per acre. Although the \$1.25 per acre was the minimum price under which such land was offered at public auction, the amount sold over this minimum, as a result of competitive bidding, was negligible. During the year of 1829, total sales of 196,245 acres of

Table 7-A
Table showing the Quantity of Land Relinquished to the United States,
Under the Provisions of the Several Laws
"For the Relief of Purchasers of Public Lands Prior to July 1, 1820"

States.	Rate per acre, \$28 and up- wards.	Rate per acre, \$18, and less than \$28.	Rate per acre, \$12, and less than \$18.	Rate per acre, \$6, and less than \$12.	Rate per acre less than \$6.	Aggregate of all the foregoing classes.	Relinquishments at \$2 per acre.	Amount of debt discharged by relinquishment.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
Ohio	980.42	1,235.64	624.07	1,494.11	410,072.04	414,406.28	374,768.13	\$1,001,069.78
Indiana.....			390.54	1,106.13	642,132.09	643,628.76	630,733.68	1,311,101.38
Illinois					667,601.46	667,601.46	658,949.60	1,340,678.59
Missouri	9.85	219.98	867.32	42,798.42	656,300.86	700,196.43	419,666.40	1,984,201.19
Alabama	37,597.86	47,107.91	70,137.98	146,231.45	1,285,301.57	1,586,376.78	976,235.77	7,801,873.51
Mississippi					132,675.73	132,675.73	132,675.73	265,351.46
Louisiana.....					904.31	904.31	904.31	1,808.63
Michigan Territory.....	183.23	56.86	399.13	1,309.56	21,202.63	23,151.40	15,306.01	72,262.83
	38,771.36	48,620.39	72,419.04	192,939.67	3,816,190.69	4,168,941.15	3,209,239.63	13,778,347.37
Aggregate of lands relinquished.....						Acres. 4,168,941.15	Purchase money. \$13,778,347.37	
Proportion at \$2 per acre.....						3,209,239.63	6,418,479.26	
Proportion at more than \$2 per acre.....						959,701.52	7,359,868.11	

Source: American State Papers, Vol. 5, Public Lands P. 528

of land had been forfeited for failure to pay the purchase price of lands bought under the \$2.00 per acre credit price, under the Act of May 10, 1800.²⁴

Public Land Policies After 1820

In 1820 the history of wholesale defaults in credit sales of government land, despite years of relief

public land sold in Illinois brought only \$245,415 or an average price of \$1.250554 per acre.²⁶

In the Vandalia Land Office in Illinois, from January 1821 to October 1828, the largest price received per acre for any tract of government land sold was \$2.17, which was for a superior parcel of land lying in the vicinity of the new seat of government of

²² op. cit. Hibbard — 1924 — History of Public Land Policies, p. 103.

²³ op. cit. Boggess, 1908 — Settlement in Illinois 1778 - 1830, p. 136.

op. cit. American State Papers, Public Lands, Vol. 5, Doc. 57, 16th Congress, 1st Sess.

²⁴ Act of May 10, 1800, 2 Stat. 73.

²⁵ Act of April 24, 1820 — 3 Stat. 566.

²⁶ op. cit. American State Papers, Public Lands, Vol. 7, p.532.

HISTORY AND SIGNIFICANCE OF SALES OF GOVERNMENT LAND

the State. The average price of all lands sold at this office, above the minimum, was \$1.73 per acre and the total amount received for such lands was only \$352, out of the total of \$22,334 received for all lands sold in this land office from January 15, 1821 to June 30, 1828.²⁷ It has already been shown that, as of June 30, 1828, there were 2,935,000 acres of unsold first-rate government land in Illinois remaining from previous years' proclamations. (Table 6-E).²⁸

An informed purchaser in 1829 would have interpreted the significance of these facts in terms of the simple economic concept of an equilibrium price. The test of such a price is that it must clear the market. A low price will result on the market's being cleared immediately. A high price will result in few sales, with quantities continuing to remain on the market. In 1829 significance to a prospective purchaser of the established \$1.25 minimum price, with large areas of Illinois land remaining unsold, can best be found in this established economic concept. He

could only have reasonably concluded that the \$1.25 minimum retail price was too high, a determination that was supported by (1) the prices extant in 1829, and (2) by private sales prices occurring at the time in the Illinois Military Tract (see Chapter 10).

In the matter of several sound contemporary opinions of value in 1829, a study of the Reports of the Illinois Land Offices, made pursuant to the Resolution of the United States Senate, as discussed in Chapter 6, clearly demonstrates that in the opinion of those land office officials in 1828, the \$1.25 per acre minimum price for 80 to 160-acre tracts of public land was not low enough to clear the market of first-rate land of which there was a great deal yet unsold; that in the contemporary opinion of these same land office officials in Illinois, the fair retail price of select timber-prairie combination was only \$1.00 to \$1.25 per acre for first - rate land, and from 50 cents to \$1.00 per acre for less desirable combined timber-prairie land; while prairie lands located away from timber

Table 7 - B
Summary of Opinions by Registers and Receivers of the Land Offices in Illinois
As Shown in Report to General Land Office in Response To A Resolution of the Senate of the United States in 1828.

Land Office		Shawneetown	Edwardsville	Vandalia	Palestine	Springfield
Reporter		Register & Receiver	Register & Receiver	Register & Receiver	Register & Receiver	Register & Receiver
Date Land Offered on Mkt.		1820	1813-1826	1821-1827	1821-1827	1823-1827
Total Acres Unsold		2,689,815	2,788,827	2,793,294	2,496,000	1,947,325
Estimated Value Per Acre		\$1.00	\$0.50*	\$0.54* \$0.40*	\$0.30	\$0.25*
1st Rate Land	Acres		118,469			212,620
	Portion of Total Unsold Land	4/9	1/20*	1/3 1/5	1/5	1/9*
	Estimated Value Per Acre		\$1.25	\$1.25 \$1.00		\$1.25
	Description	Timber & Variegated Woodland & Prairie		Fertility of Soil Timber & Prairie	Good Soil and Timber	Timber & Prairie
2nd Rate Land	Acres		888,082			**
	Portion of Total Unsold Land	4/9	3/10*	1/6 2/5	1/5	
	Estimated Value Per Acre		\$1.00	\$0.78 \$0.50		
	Description	Timber & Variegated Woodland & Prairie		Good Arable Land Inferior to 1st Rate	Good Soil But Prairie Lying Convenient To Timber	
3rd Rate Land	Acres		587,037			
	Portion of Total Unsold Land		2/10*	1/5	1/5	
	Estimated Value Per Acre		\$0.50	\$0		
	Description			Prairie, Remote from Timber & Water	Thin Soil & Sparsely Timbered	
Land Unfit for Cultiva- tion	Acres		1,195,239			1,734,705
	Portion of Total Unsold Land	1/9	9/20*	1/2 1/5	2/5	8/9*
	Estimated Value Per Acre		\$0.10	\$0		\$0.12-1/2
	Description	Lowness of Situation and Barrenness of Soil	Contains Much 1st Rate Soil, Prairie, Distance from Timber.	Sterile & Unfit for Tillage	Low Wet Prairies Marshes or Deeply Inundated	No Timber or Remoteness from Timber & Water

Remarks: 1. No report was made by the Kaskaskia Officials for their records too poor.
2. * The figure to be calculated based on the original data.
3.** The report of Springfield Land Office combined the 1st and 2nd rate lands into one figure as arable land.

Source: American State Paper, Public Lands, Vol. 5. pp. 550-557

Appraiser's Note: Interpretation of these classifications varies between the various land offices.

Walter R. Kuehnle - 1958

²⁷ Ibid. American State Papers, Public Lands, Vol. 5, p. 554.

²⁸ Chapter 6.

and water and inundated bottom and sterile lands unfit for tillage were estimated at from no value, whatever, to 12 cents per acre (see Table 7-B).²⁹

In the preceding Chapter 6 it has been shown that there was much agitation in Illinois prior to 1829 for the downward graduation of the \$1.25 per acre minimum price of public lands. One plan suggested a reduction of 25 cents each two years until the price was reduced to 25 cents per acre. It was as a direct result of this agitation that in 1828 the Senate of the United States passed the 1828 Resolution, discussed in the preceding chapter, requiring the registers and receivers of all of the United States land offices to report the quantity and quality of the land remaining unsold in their respective districts and to estimate its value. The six Illinois land offices were located at Kaskaskia, Shawneetown, Edwardsville, Palestine, Springfield and Vandalia (Figure 5-6).³⁰

No report was made by the officials of the Kaskaskia office, who stated that the condition of their records was too poor to permit the compiling of such data. The other five Illinois land offices made reports, and their opinions and estimates of land values are almost contemporary with the valuation date of July 29, 1829 for the subject lands.

Reports on Illinois Land Values in 1828

Information included in these reports of Illinois land office officials, as to the quantity, quality, value and salability of the different types of land remaining and unsold in their respective areas, has already been discussed in the preceding Chapter 6. In addition to the information heretofore discussed, however, these reports also contained each reporting official's opinion of the actual retail value of the remaining unsold land in his land office area, i.e. the price at which each thought it might be sold to settlers.³¹ A synopsis of these price reports is shown in Table 7-B. An examination of this table, and of the official reports from which they were compiled, shows a unanimity of opinion as to lack of desirability of lands without timber.

The Senate Resolution of 1828, requesting these reports, was to obtain information as to the fair market values per acre of typical small parcels of the type then being sold to settlers and the average price that the United States could hope to realize from the sale of the remaining lands. From these reports a prospective purchaser of Areas 147 and 148 would have secured facts as to which types of land were

salable with reference to the price that he could reasonably have expected to receive in reselling the lands in small parcels in competition with all other available lands in Illinois. These 1828 estimates, therefore, would have been given respectful consideration by a prospective purchaser in 1829. A realistic historical appraisal of the subject property must likewise accord equal consideration to such nearly contemporary opinions of land values.

It may be noted from Table 7-B that the separate estimates of the two officials from the Vandalia Land Office differed in the amount of first-rate land reported, although they were closer in their estimates of a combined total acreage of first and second-rate land. In the absence of exact information, a prudent purchaser would have been conservative in his estimates of the amount of salable land included in any contemplated purchase.

Chapter 8, following, contains a complete and original analysis made for the purpose of this study of the public land sales at the Springfield Land Office between 1823 and 1829. This analysis has been made to test the soundness of the hereinbefore recited Illinois land office value opinions of 1828, and those also generally reflected in the writings of the many historians of this period, as to the type of land that was salable between 1823 and 1829.

Summary

In the absence of evidence of sales of large tracts of land in Illinois close to 1829, the reaction of the market to the government minimum price of \$1.25 per acre for public lands undoubtedly would have influenced the price that a prospective purchaser could reasonably have paid for Areas 147 and 148 for resale in small tracts. A primary consideration of a prospective purchaser in 1829 would have been the anticipated resale price of the lands, and rate at which the property could probably have been resold to settlers or other purchasers during the reasonably foreseeable future, subsequent to July 29, 1829.

Lacking an adequate market for the disposal of public lands in large tracts, the Federal Government enacted a statute in 1800, permitting the sale of sections or fractional sections of government land on credit at \$2.00 per acre, or for a \$1.64 per acre cash discount price. This law continued in effect until 1820 at which time the history of wholesale defaults by land purchasers, despite years of relief measures, caused Congress to abolish the credit system by en-

²⁹ Ibid. American State Papers, Public Lands, Vol. 5, Doc. 685 - pp. 550 - 557.

³⁰ Chapter 5.

³¹ op. cit. American State Papers, Public Lands, Vol. 5, pp. 550 - 557.

HISTORY AND SIGNIFICANCE OF SALES OF GOVERNMENT LAND

acting a statute fixing a minimum cash price for government land at \$1.25 per acre. Public lands sold on this basis, from 1820 to 1829, at a reduced rate of sale, in comparison with those previously sold on credit. Moreover, the minimum cash price also proved to be the average for which the lands sold during this period. This fact, when construed in connection with the large surplus of first - rate public lands available for purchase, disclosed that the \$1.25 per acre minimum price was an artificially supported

retail price, and far above an economic market price for the general average of such lands.

In 1828, in response to a request from Congress, reports were made by officials of five out of six land offices in Illinois, estimating the retail value of the unsold government lands at (1) \$1.00 to \$1.25 per acre for first - rate land; (2) \$1.00 to 50 cents for less desirable land; and (3) 12½ cents per acre to 0 value for prairie lands, those remote from timber, and lands unfit for tillage.

Chapter 8

PREFERRED LAND TYPES IN 1829

What types of land were readily salable to prospective settlers in Illinois in 1829, and how much of each salable and unsalable type was contained in Areas 147 and 148? A potential purchaser of this property for resale would have endeavored to find the answers to these questions by inspection and analysis of actual sales of government land up to that time. Such an analysis has been made in a special study by the writer. The first step in this study was to select an area in Illinois in which public lands had previously been competitively offered and sold for a period of years prior to 1829. The second step was to divide the total acreage of this land into classes similar to those into which Areas 147 and 148 have been divided as shown in Table 1 - A.¹ The final step was to make a study of the actual sales consummated in each such class of land for a number of years prior to 1829, determining the percentage sold in each class.

Through actual inspections of the lands in such an area, and by consulting land office records of sales in the area, a prospective purchaser could have acquired substantially the same information as has been gained by this study. By means of such information, a potential purchaser in 1829 could reasonably have assumed that, after Areas 147 and 148 had been offered for resale, settlers would exercise the same preferences and aversions for specific classes of land as had previously been reflected in actual purchases of public lands in Illinois.

Selected Study Area — Springfield Land Office

The area selected by the writer for such a land sales study was that within the Springfield Land Office, comprising five areas, which were progressively proclaimed for sale in November 1823, November 1824, September 1826, October 1827, and in November 1829. The lands of this office lay west of the Third Principal Meridian and south of the Illinois River between Townships 14 and 25 North, both inclusive. This land office included the famed Sangamon River

area, which was the most desirable area of Illinois for settlement from 1823 to 1829. (See Table 8 - A)² Representing the northern frontier of Illinois in 1829, except for a few scattered settlements and the lead mine area at Galena, this area constituted the extent of settlement toward Areas 147 and 148 lying to the north in Illinois and Wisconsin, the latter then a part of Michigan Territory.

Public Land Sales — Original Entries

The entries of land purchased from the United States in each of these five areas of the Springfield Land Office are shown on the land office original books.³ From these records a tabulation was made

Table 8 - A
Springfield Land Office
Government Land Offered for Sale
During 1823 - 1829 Period

Area	Date offered on Market	Offering	
		No. of Sections	No. of Acres*
1	November 17, 1823	1211	775,040
2	November 1, 1824	720	460,800
3	September 25, 1826	837	535,680
4	October 22, 1827	731	467,840
5	November 2, 1829	635	406,400
Total		4134	2,645,760

* Estimated at 640 Acres x No. Sections

Walter R. Kuehnle - 1958

showing the number of acres entered for original sale in the 1823 - 1829 period, in each section, in the areas of the above five offerings. This information was then converted to the number of 80 - acre tracts offered for sale, and the number sold in each section, in each of the five areas.⁴

¹ Chapter 1.

² Sales of the various land offices in Illinois from 1820 to 1829 are shown in Table 6 - G — Chapter 6.

³ Copies of these books are preserved in the office of the Secretary of the United States Department of Interior, and copies, known as Books 693, 694 and 695 Springfield Land Of-

fice are in the custody of the Auditor of the State of Illinois. (auditor's valults) in Springfield, Illinois.

⁴ All but a few sales were in regular 80 - acre tracts. The few sections that were of odd acreages were interpreted in the closest number of units of 80 acres. A standard section contains eight 80 - acre tracts, or 640 acres.

Character of Sold and Unsold Lands — 1823-1829

From the above information each and every land sale made in the Springfield Land Office area from 1823 to 1829, inclusive, was definitely located within a specific square mile, identified by section, township and range. Having thus shown the number of 80-acre tracts sold in each section, ranging from 0 to a maximum of eight, the next step was to ascertain the characteristics of each section in the entire area as to timber, terrain and various simple soil types. Tabulation and analysis of this information as to the number of sales (or lack of sales) in each section and corresponding facts concerning its timber and a "pioneer's eye" view of the character of its soil and terrain, clearly indicated the relative desirability to the settlers of prairie sections and sections with various timber-soil combinations. These data also provided a factual basis for making informed estimates as to the projection of probable rates of sale, when offered for sale to settlers, for different type land sections in Areas 147 and 148 containing timber-soil combinations similar to those found within the Springfield Land Office.

Timber and Soil Maps Reconstructed for 1829

In order to determine the existing amount of timber, soil types and the character of the terrain in each section, simple soil maps of the five areas proclaimed for sale in the Springfield Land Office in the 1823-1829 period were constructed from basic Illinois soil maps and reports of the original government surveys. These soil maps were constructed in exactly the same manner as those for Areas 147 and 148 appearing at the end of Chapter 1.⁵ On these soil maps timber soils are those shown in solid or hatched green; streams, timber boundaries, roads, trails, fields and other notations, as recorded by the original government surveyors, are shown in red; soil categories or classifications numbered 1 to 13, inclusive, are contained in black boundary lines on the soil maps, as previously described in Chapter 1.⁶ These reconstructed soil maps, coded identically with those of Areas 147 and 148, show generalized morphologic and physiographic soil characteristics of each section in the Springfield Land Office, and provide a contemporary view of the terrain as it would have appeared in 1829 to settlers and to prospective purchasers of the subject lands. (See maps Series I to V at the end of this chapter.) From these maps it is possible to discern the relative amount of timber and of various soil and terrain characteristics in each section

in which there were sales of land, as well as in each section in which no land was sold, between 1823 and 1829, in the previously described five locations in which public lands were proclaimed for sale at the Springfield Land Office.

Settlers' Land Preferences Visually Demonstrated

Having both maps indicating 1829 timber, soil and terrain characteristics and the number of 80-acre tracts sold to 1829 inclusive, in each section out of the eight normally available, it was possible to demonstrate settler land preferences visually as well as statistically. For a visual presentation of the quantity of land sold in each section, one-eighth of the section is blocked out in blue, starting at the lower right-hand corner, to indicate each 80-acre tract sold up to and including the year of 1829.⁷ Thus a section 1/8 blocked out indicates that in that section one 80-acre tract was sold; 2/8 blocked out indicates two 80-acre tracts were sold, etc.; while a section 8/8, or entirely blocked out, indicates that the entire section was sold between the date of sale proclamation and the end of the year 1829.

These combination maps, including every section of public land contained within the Springfield Land Office and showing timber locations, soil types, terrain characteristics together with the number and location of sales, constitute such a compelling demonstration of the overwhelming preference for timbered lands as would appear to render further comment on this point unnecessary. Suffice it to say that in the face of these facts no prospective purchaser of Areas 147 and 148 in 1829 would have considered it possible to resell those prairie sections, of these tracts, barren as they were of timber, within the foreseeable future. Their eventual resale would have been a gamble which no informed purchasers would have chosen to hazard in 1829.

Classification of Lands for Statistical Analysis

A statistical analysis was also made of these facts by transferring both the descriptions of the timber, soil and characteristics, as shown on the map of each section, and the number of 80-acre tracts sold in the section to a written tabulation and later to an IBM key-punched card. In this process, 4,134 cards, one for each section of land in the Springfield Land Office area, were so punched to show the percentage of timber and soil types and were then sorted and tabulated by significant groups for interpretation.⁸

⁵ Pages 17 - 28.

⁶ Pages 7 - 9.

⁷ Due to the scope of this study and the large areas covered,

it was neither feasible nor essential to its purpose to locate each 80-acre sale in its exact situation within the section.

⁸ Punched and mechanically sorted and tabulated by International Business Machines, Inc. as directed by the writer.

PREFERRED LAND TYPES IN 1829

Sales of Land in 1823 - 1829

The areas calculated above as having deciduous hardwood timber were regions where the present timber soils indicated that they were once forested with such timber, plus such adjacent peripheral area as the original government surveys of the lands showed as being timbered.⁹ Also included as timbered were lands indicated on the maps as being well-drained prairie soils, more remote from timber soils but where the presence of timber was indicated by notations on the original government survey.

The areas calculated as poor class timber were lands where timber was indicated on the original surveys but was not located on either timber or well-drained prairie soils. Such land designated as poor class timber was usually that located in wet prairies, bottom lands and sandy and rocky soils.¹⁰

Study of the compiled data showed that:

1. The Springfield Land Office area contained 4,134 sections, or 33,072 eighty-acre tracts, or approximately 2,650,000 acres.¹⁴
2. Approximately 30% of its total area was largely under deciduous hardwood timber.
3. Approximately 30% of its total area was dominantly well-drained fertile upland prairie soil.
4. The remaining 40% of its area was largely prairie soil under depressional topography, terrace or second bottom, some with poor type timber, requiring artificial drainage, ponded areas, drouthy sandy soils, and rough rocky areas.

Preference Shown for Land in Timbered Sections

Statistical analysis of the data showed the highest rate of sale was in sections 35% - 65% timbered, thereby confirming contemporary historical opinion of the preference of settlers at that time for "a just proportion of timber and prairie lands." For the entire Springfield Land Office 32.3% of all land proclaimed for sale in the five areas that was located in this class of section was sold by the end of 1829 (Table 8 - B). In the Sangamon River area, (Area 1), proclaimed for sale in 1823, seven years' sales disposed of 41.2% of the total offering in this class (Table 8 - C; also Map Series I).

In the northernmost portion proclaimed for sale in November 1829, (Area 5), the sales made during

the last two months of 1829 were analyzed. It is highly probable that many of these purchasers were settlers who had already located in this area prior to the 1829 proclamation date. However, whether they settled on the land before or after their purchases, first preference for a timber - prairie combination is clearly indicated by the fact that 10% of all land

Table 8 - B
Springfield Land Office Government Land Offered and Sold
During 1823 - 1829 Period
Five Acres Proclaimed for Sale, 1823 - 1829

Type of Land	Lands Offered for Sale		Lands Sold		Percentage of Offered Lands Sold
	80 Acre Tracts	Est. Acres ⁺	80 Acre Tracts	Est. Acres ⁺	
Sections containing no timber - Prairie Land	13,840	1,107,200	203	16,240	1.5 %
Sections containing timbered lands on less fertile and poorly drained soil*	3,568	285,440	71	5,680	2.0 %
Sections containing 5 - 30 % of total area timbered**	4,152	332,160	586	46,880	14.1 %
Sections containing 35 - 65 % of total area timbered**	3,088	247,040	997	79,760	32.3 %
Sections containing 70 - 100 % of total area timbered**	8,424	673,920	2,094	167,520	24.9 %
Total	33,072	2,645,760	3,951	316,080	11.9 %

* Timber in section indicated on original government survey except that on soil categories 1, 2, 3, 5, and 6.

** Timber in section indicated by timber soils (soil categories 5 and 6) and on original government survey showing timber adjacent to timber soils.

+ Number of acres estimated at 80 acres x No. 80 acres ± tracts.

Walter R. Kuehnle - 1958

Table 8 - C
Springfield Land Office Government Land Offered and Sold
During 1823 - 1829 Period
Area 1 Proclaimed for Sale in 1823

Type of Land	Lands Offered for Sale		Lands Sold		Percentage of Offered Lands Sold
	80 Acres Tracts	Est. Acres ⁺	80 Acre Tracts	Est. Acres ⁺	
Sections containing no timber - Prairie Land	3,288	263,040	142	11,360	4.3 %
Sections containing timbered lands on less fertile and poorly drained soil*	216	17,280	28	2,240	13.0 %
Sections containing 5 - 30 % of total area timbered**	1,824	145,920	310	24,800	17.0 %
Sections containing 35 - 65 % of total area timbered**	1,384	110,720	570	45,600	41.2 %
Sections containing 70 - 100 % of total area timbered**	2,976	238,080	1,162	92,960	39.0 %
Total	9,688	775,040	2,212	176,960	22.8 %

* Timber in section indicated on original government survey except that on soil categories 1, 2, 3, 5, and 6.

** Timber in section indicated by timber soils (soil categories 5 and 6) and on original government survey showing timber adjacent to timber soils.

+ Number of acres estimated at 80 Acres x No. of 80 acres ± tracts.

Walter R. Kuehnle - 1958

in sections 35% to 65% timbered was sold during these first two months of 1829 (Table 8 - D; also Map Series V).

By comparison, sales of the total land offered in prairie sections without any timber were negligible at 1.5% in the entire area of the Springfield Land Office, up to 1829; 4.3% in seven years in the Sangamon River area and none in the first two months of

⁹ Areas in soil categories 5 and 6 as shown in solid or hatched green on the reconstructed timber soil maps Series I to V at the end of this chapter.

¹⁰ Timber limits as shown on the original government surveys of the land appear as a dotted red line on the reconstructed soil maps of the Springfield Land Office at the end of this chapter — Maps Series I to V. (Not to be confused

with red dash lines indicating trails and roads. The two were, however, often the same, as trails frequently followed the timber edge.)

¹¹ A small number of the sections are irregular and contain either more or less than 640 acres. However, for the purpose of analysis each $\frac{1}{8}$ section is assumed to contain 80 acres.

APPRAISAL OF ROYCE AREAS 147 AND 148

sales, in the area of the 1829 proclamation. Tables 8-B, 8-C and 8-D show the acres offered and sold in the several land classifications into which the data were subdivided for analysis and more detailed information of the results of this phase of the study is included in these tables. A prospective purchaser, in 1829, of Illinois lands, could not have lacked awareness of the land preferences shown by this study.

Table 8 - D
Springfield Land Office Government Land Offered and Sold
During 1823 - 1829 Period
Area 5 Proclaimed for Sale in 1829

Type of Land	Lands Offered for Sale		Lands Sold		Percentage of offered Lands sold
	80 Acre Tracts	Est. Acres ⁺	80 Acre Tracts	Est. Acres	
Sections containing no timber - Prairie Land	1,864	149,120	4	320	-- %
Sections containing timbered lands on less fertile and poorly drained soil*	808	64,640	31	2,480	3.8 %
Sections containing 5 - 30 % of total Area timbered**	440	35,200	43	3,440	9.8 %
Sections containing 35 - 65 % of total Area timbered**	312	24,960	30	2,400	9.6 %
Sections containing 70 - 100 % of total Area timbered**	1,656	132,480	111	8,880	6.7 %
Total	5,080	406,400	219	17,520	4.3 %

* Timber in section indicated on original government survey except that on categories 1, 2, 3, 5, and 6.

** Timber in section indicated by timber soils (soil categories 5 and 6) and on original government survey showing timber adjacent to timber soils.

+ Number of acres estimated by 80 Acres x No. of 80 Acres ± tracts.

Walter R. Kuehnle - 1958

Preference for Varied Timber - Prairie Combinations

Further analysis of the sales of public land in the five areas of the Springfield Land Office during the years 1823 to 1829, inclusive, indicated that the amount of land sold depended not only on the percentage of timber in each section but also on the quality of the land associated with it. The best of the non-timbered lands were the well-drained, fertile prairie soils,¹² and were, as recounted by historians, in sections combining suitable amounts of such good prairie and good timber, the type of site most preferred by settlers.¹³ Previous tables 8-B to 8-D only show the percentage in five classes of all timbered and non-timbered land in the Springfield Land Office offered and sold during the years 1823 to 1829, inclusive.

In order to study the effect on sales, within a section of the association of fertile, well-drained prairie soil with suitable amounts of timber, the total area of the Springfield Land Office was further sub-divided into sixteen categories of possible timber-prairie combinations. The prairie sections were classified by the percentage of fertile, well-drained prairie soils which they contained. The timbered sections are classified in accordance with the combination of the percentages of both timber soil and fertile, well-drained prairie soil which they contained.¹⁴

The land most preferred by buyers was in sections 35% or more timbered and associated with some well-drained prairie soil, as indicated from the sale, by the end of 1829, of 38% to 43% of all land offered in this group in the five areas in the Springfield Land Office. In the Sangamon area (Area 1), 41% to 55% of all land offered in this class of section was sold in this seven-year period, 1823 - 1829, in which these lands were available (see Tables 8-E and 8-F.)

Table 8-E
Summary of Percentage of Total Offerings of Public Land Sold
In Springfield Land Office.
Period 1823 - 1829

Percentage of Section in Timber	Percentage in Fertile Well-Drained Prairie*	Percentage of Land Sold			
		Area 1 ⁺	Area 2 ⁺⁺	Area 3 ⁺⁺⁺	5 Area Total
0 %	0 - 100 %	4 %	1 %	2 %	1 %
5 - 30	0	9	6	4	6
	5 - 30	11	13	24	12
	35 - 65	14	18	28	17
	70 - 100	20	15	10	15
35 - 65	0	17	6	2	9
	5 - 30	41	34	47	38
	35 - 65	46	35	46	38
	70 - 100	--	--	--	--
70 - 100	0	27	21	13	15
	5 - 30	55	44	40	43
	35 - 65	--	--	--	--
	70 - 100	--	--	--	--
Total		23 %	10 %	16 %	13 %

Source: Summary from Table 8 - H

* Soil Categories 1-2-3

+ Offered on market during 7 calendar years

++ Offered on market during 6 calendar years

+++ Offered on market during 4 calendar years

Walter R. Kuehnle - 1958

Table 8 - F
The Percentage of Offered Land Sold of Highest Preference Groups
Springfield Land Office
Period 1823 - 1829

Percentage of Section in Timber	Percentage in Fertile Well-Drained Prairie*	Percentage of Land Sold			
		Area 1 ^{**}	Area 2 ^{**}	Area 3 ^{**}	5 Area Total
35 - 65%	5 - 30%	41 %	34 %	47 %	38%
35 - 65	35 - 65	46	35	46	38
70 - 100	5 - 30	55	44	40	43

Source: Data from Table 8-H. For Number of acres offered and sold in these groups also see that table.

* Soil Categories 1-2-3

** Area 1: Lands offered on market during 7 calendar years.

Area 2: Lands offered on market during 6 calendar years.

Area 3: Lands offered on market during 4 calendar years.

Walter R. Kuehnle - 1958

¹² Designated as soil categories 1 - 2 - 3 on the reconstructed timber Soil Maps Series I to V at the end of this chapter.

¹³ See Chapter 5.

¹⁴ Fertile, well-drained prairie soil is classified in this report as soil classes 1 - 2 - 3 as defined in Chapter 1.

PREFERRED LAND TYPES IN 1829

The next preference class of land was in sections containing 35% or more timber, but no associated fertile, well - drained prairie soil. By comparison, only 9% to 15% of the total of the proclaimed lands in this group were sold up to the end of 1829. During the seven years 1823 - 29, in which the lands in this group in the Sangamon area were offered for sale, 17% to 27% were sold (Table 8 - G.)

Table 8 - G
Percentage of Lands sold in the Timber Sections
Without Associated Fertile Well-drained Prairie Soil Groups
Springfield Land Office
Period 1823 - 1829

Percentage of Section in Timber	Percentage in Fertile Well-Drained Prairie*	Percentage of Land Sold			5 Area Total
		Area 1 ⁺	Area 2 ⁺	Area 3 ⁺	
5 - 30 %	0 %	9 %	6 %	4 %	6 %
35 - 65	0	17	6	2	9
70 - 100	0	27	21	13	15

Source: Data from Table 8-H for the number of acres offered and sold in these groups also see that table.

* Soil categories 1-2-3.

+ Area 1: offered on market during 7 calendar years.
Area 2: offered on market during 6 calendar years.
Area 3: offered on market during 4 calendar years.

Walter R. Kuehnle - 1958

A complete report of the total acres offered and sold in each of the sixteen selected timber - prairie combinations, in each of the five proclamation areas, are shown in Table 8 - H.

Table 8-1
Percentage of Land Sold in Areas Where Timber Was Indicated by Original Government Land Survey on Non-timber Soils.
Springfield Land Office
Period 1823 - 1829

Where Timber Was Indicated by Original Government Land Survey on Non-Timber Soils	Percentage of Land Sold
Soil Categories 1-2-3*	17%
Soil Categories 4-7-8	2%
Soil Categories 9-10-11-12-13	1%

*Fertile well-drained prairie soil.

Walter R. Kuehnle - 1958

The only sound conclusion to be drawn from these data is that the combination of timber and well-drained prairie soil offered the most attractive sites to purchasers in 1829. Timbered sections without associated fertile dry prairie were less attractive. Land in prairie sections without timber was, regardless of its fertility, in almost no demand, only 1.5% of all of it having been sold at the Springfield Land Office between 1823 and 1829. (See Table 8 - B.)

Timber on Non - Timber Soils

Normally timber soil (designated in preceding chapters as soil categories 5 and 6) indicates areas developed under deciduous hardwood timber. In some cases this timbered area extends into the periphery of the timber soils reaching into adjacent prairie. This association of timber with timber soils is confirmed by the reconstructed soil maps at the end of this chapter, on which both the timber soils, and the areas designated as timber on the original surveys, have been superimposed.

Tables 8 - E and 8 - H included all timber indicated by timber soils and adjacent thereto where indicated on the original government surveys. However, in addition to timber located on and adjacent to timber soils, there was a relatively small number of sections, only 501 out of a total of 4,134, containing land not adjacent to timber soils but which had been designated in the original government land surveys as having varying amounts of timber. These lands included both dry and wet prairie and bottom lands, with both good and poor timber. Analysis of the percentage sold of the land offered for sale in the Springfield Land Office in sections containing this class of timber, showed a probability that such indicated timber, if located on well - drained prairie soil, was equally acceptable with that on timber soils. 17% of the total offerings in the Springfield Land Office of this class of land were sold up to 1829. The balance, with sales of 1% to 2% of the total number of acres of this class of land offered for sale in this period, was indicated as having little more acceptability than prairie lands (see Table 8 - I).¹⁵

Classifications of Desirability

From this it is evident that a prospective purchaser could have ascertained broad classifications of land in Areas 147 and 148, in terms of resale and the

¹⁵ There are 501 sections of such land (approximately 180,000 acres) on which the original U.S. survey shows timber on land

shown on the reconstructed soil maps, Series I to V at the end of this chapter, to be non-timber soil distant from timber soils.

APPRAISAL OF ROYCE AREAS 147 AND 148

Table B - H
Land Offered in Each of Five Sale Areas
Classified by Percentage Which is Timber, Percentage Which is Soil Categories 1-2-3, and the total Number of Acres of Land Offered and Sold
Springfield Land Office
Period 1823 - 1829

Percentage 1-2-3		0 %		5 - 30%		35 - 65%		70 - 100%		Total	
Percentage Timber	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold
AREA 1											
0 %	20480	2240	11 %	56960	1120	2 %	87040	3360	4 %	98560	4640
5 - 30	7680	720	9	15360	1760	11	56320	7920	14	60160	12240
35 - 65	14720	2560	17	32000	13200	41	63360	29200	46	--	--
70 - 100	134400	36000	27	103680	56960	55	--	--	--	--	--
Total	177280	41520		208000	73040		206720	40480		158720	16880
AREA 2											
0 %	22400	0	0 %	37120	320	2 %	74880	400	1 %	115200	720
5 - 30	8320	480	6	8960	1120	13	16000	2800	18	31360	4720
35 - 65	12800	800	6	12160	4160	34	17280	6000	35	--	--
70 - 100	52480	11280	21	27520	12240	44	--	--	--	--	--
Total	96000	12560		85760	17840		108160	9200		146560	5440
AREA 3											
0 %	89600	1760	2 %	13440	240	2 %	22400	400	2 %	28800	240
5 - 30	7040	320	4	5760	1360	24	15360	4240	28	19200	1920
35 - 65	8320	160	2	14720	6880	47	25600	11680	46	--	--
70 - 100	124800	15600	13	62720	25360	40	--	--	--	--	--
Total	229760	17840		96640	33840		63360	16320		48000	2160
AREA 4											
0 %	144640	0	0 %	22400	0	0 %	24320	240	10 %	99840	240
5 - 30	10880	0	0	10240	480	5	0	0	0	7040	400
35 - 65	5760	240	4	4480	640	14	7680	640	8	--	--
70 - 100	28160	320	1	6400	800	13	--	--	--	--	--
Total	189440	560		43520	1920		32000	880		106880	640
AREA 5											
0 %	61440	0	0 %	5120	0	0 %	23680	240	1 %	58880	80
5 - 30	2560	560	22	1280	320	25	3200	320	10	17280	960
35 - 65	3840	400	10	3200	480	15	15360	1120	7	--	--
70 - 100	95360	2400	3	37120	6480	17	--	--	--	--	--
Total	163200	3360		46720	7280		42240	1680		76160	1040
SUM OF FIVE AREAS											
0 %	338560	4000	1 %	135040	1680	1 %	232320	4640	2 %	401280	5920
5 - 30	36480	2080	6	41600	5040	12	90880	15280	17	135040	20240
35 - 65	45440	4160	9	66560	25360	38	129280	48640	38	--	--
70 - 100	435200	65600	15	237440	101840	43	--	--	--	--	--
Total	855840	75840	9 %	480640	133920	28 %	452480	68560	15 %	536320	28160

Walter R. Kuehnle, 1958

probable rate at which they could be resold to settlers, as follows:

Class One Section — Those sections indicated as being 35%, or more timbered by timber soils, (soil categories 5 and 6) and by adjacent timber, as indicated by original United States surveys, and shown as containing some well - drained fertile prairie (soil category 1 - 2 - 3).

INCLUSIONS CLASS ONE

% of Section in
Timber as Indicated
by Category 5 - 6 and
by U.S. Survey
Adjacent Thereto

35% - 65%

70% - 100%

% of Section in
Well - drained Prairie
Soil as Indicated by
Category 1 - 2 - 3

5% - 30%

35% - 65%

5% - 30%

Also sections with 35% to 100% timber, according to original United States survey on well - drained prairie soil (soil category 1 - 2 - 3) not adjacent to timber soil (soil category 5 - 6.)

Class Two Sections — All remaining sections indicated as being timbered by timber soil, (soil category 5 - 6) and by United States surveys adjacent. Survey indications of timber on soils, shown on the reconstructed soil maps to be fertile, well - drained prairie (soil category 1 - 2 - 3) are also included in this class.

INCLUSIONS CLASS TWO

% of Section in
Timber as Indicated
by Category 5 - 6 and
by U.S. Survey
Adjacent Thereto

5% - 30%

35% - 65%

70% - 100%

% of Section in
Well - drained Prairie
Soil as Indicated by
Category 1 - 2 - 3

0%

5% - 30%

35% - 65%

70% - 100%

0%

0%

Also sections with 5% to 30% timber according to original United States survey, on well-drained prairie soil (soil category 1 - 2 - 3), not adjacent to timber soils (soil category 5 - 6).

It may be observed from the above that these sections fell into this second class for two reasons. 80 - acre tracts in sections equally timbered with those in Class One, but lacking associated fertile well-drained prairie, were shown by sales to be less desirable to settlers. On the other hand, in sections less fully timbered (5% - 30%), associated with the desirable fertile well - drained prairie, sales were fewer, not due to inferiority of the timber - prairie 80's sold, but most likely because there were fewer salable 80 - acre tracts in such sections.

PREFERRED LAND TYPES IN 1829

Accordingly, such sections are included in this second class of lesser desirability.

Class Three Section — The indicated third class, which will hereinafter be designated as Class Three Section, is composed chiefly of the prairie sections with both good and poor soil but remote from timber and the inundated bottom lands. Seven years of sales in the Springfield Land Office area show that such lands, which contemporary opinion also held to be unsalable, had little appeal to settlers in 1829.

Also included in this class are sections with surveyor's indication of timber on other than fertile, well - drained prairie soil. Some of this land was poor and without intrinsic value; a large portion, however, was rich soil good for cultivation. However, in the face of this demonstrated lack of appeal of this class of land to settlers, a prospective purchaser in 1829 would have had little or no interest in the purchase of lands comprised by this class of section.

Classification of Sections

Accordingly, the price that a prudent purchaser would have paid for the subject Areas 147, 148A and 148B depended on the quantity of land in each of these three general classifications:

First Class — Sections combining substantial areas of good timber and fertile well - drained prairie. These were the most salable lands.

Second Class — Sections inferior in quantity and quality of timber - prairie combinations and therefore, as a whole, less salable than First Class Sections.

Third Class — Prairie and bottom lands of all qualities and undesirable timber land all of which had little contemporary demand, and which would not have been considered salable in 1829.

Having established from a study of actual sales these two classes of sections containing salable lands, and another class which settlers had shunned almost completely, a prospective purchaser in 1829 could prudently have assumed that if he purchased Areas 147 and 148 and offered them for resale, settlers would again exercise these same preferences and aversions which they had previously demonstrated, in purchasing government lands in the Springfield Land Office. Accordingly, this 1829 purchaser would have determined to a greater or lesser degree the approximate amount of land falling in each of these categories

within Areas 147, 148A and 148B. With this estimate once determined he could next have calculated expenses of resale, taxes, interest on his investment and other carrying charges against a probable rate of disposal of the lands in each of the three classes as heretofore outlined. From this, probable annual receipts from such sales of land, at the competitive price then obtainable for similar lands in Illinois, could have been estimated.

The total price which any prospective buyer could logically have paid in 1829, for Areas 147, 148A and 148B, would have been influenced by such calculations and considerations.

Summary

Analysis of the physical characteristics of public lands sold, compared with those offered for sale in the Springfield Land Office area during the 1823-1829 period, indicated beyond question that land purchasers had strong preferences for timbered land. Maps Series I to V on the pages immediately following and the statistical analysis of these sales in Tables 8 - A to 8 - I disclose the greatest preference for land to have been in sections where, in addition to timber, there was an acceptable amount of fertile, well - drained prairie. This confirmed the contemporary statements, recited in a preceding chapter, to the effect that land with a "just proportion of timber and dry prairie" was the type most in demand by settlers in 1829.

At the same time, an analysis of the land sales made within the Springfield Land Office, in the years 1823 to 1829, showed that demand for land in prairie sections without good deciduous hardwood timber was so small as to offer little inducement to acquire them for resale purposes. This fact has also confirmed the conclusions of historians of that date, quoted in preceding chapters, and of William Lee O. Ewing of the Vandalia Illinois Land Office, who in 1828 reported to the Commissioner of the General Land Office at Congressional direction with respect to the unsalability of prairie lands in Illinois:

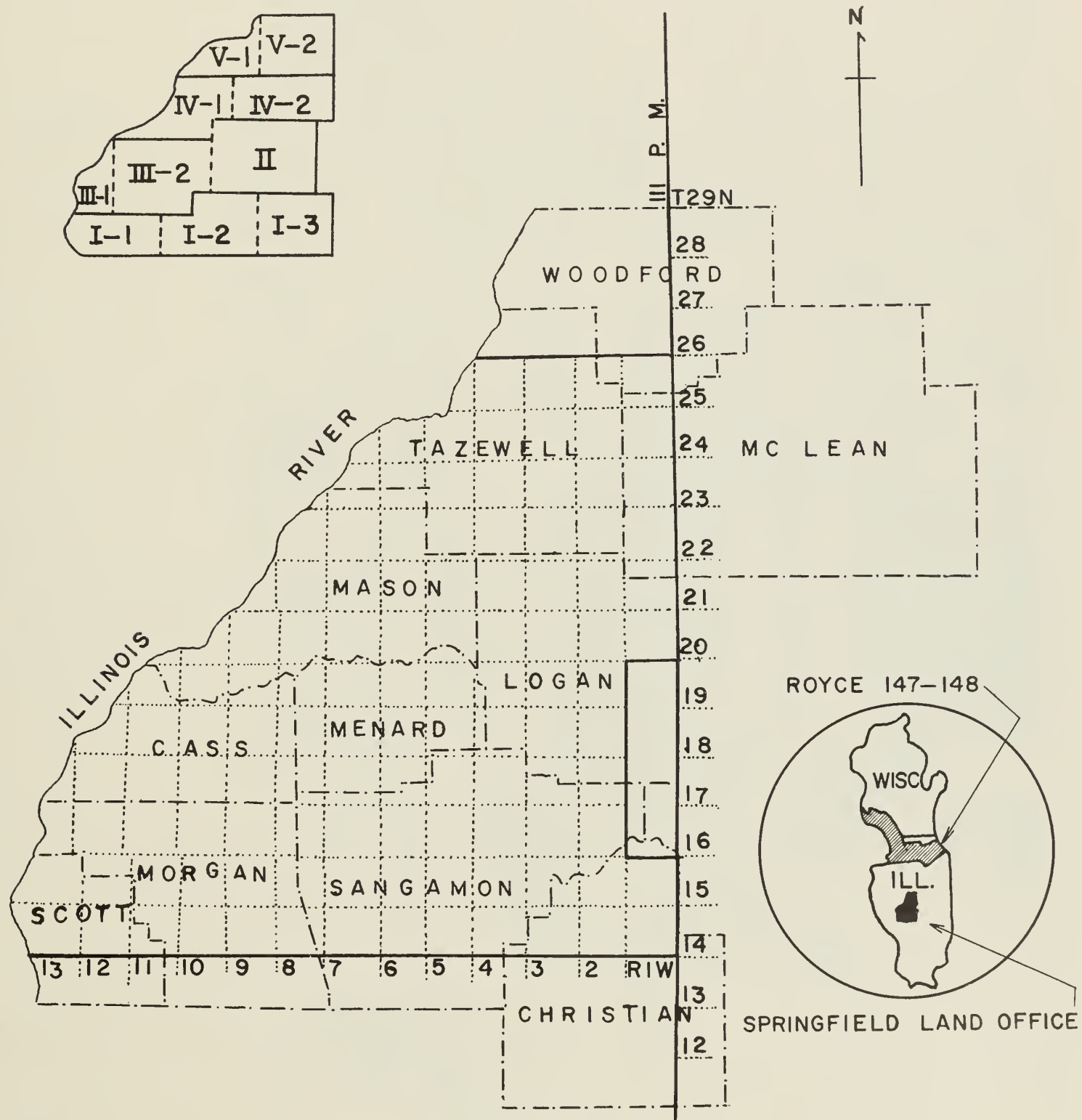
. . . At present it will not sell, nor would it be accepted in donation on condition of actual settlement; . . .

Of the whole of this class, therefore, it may be said that it is at present unsalable and of no value; and that it will so remain during a period to which no reasonable foresight can fix a termination.

**MAPS OF COMPARABLE AREA SHOWING SOIL, TIMBER, TOPOGRAPHICAL
CHARACTERISTICS AND PROPORTION OF SECTION SOLD**

MAP INDEX
 AREA OF SPRINGFIELD LAND OFFICE
 (EAST OF ILLINOIS RIVER)
 GOVERNMENT LAND PROCLAIMED AND SOLD 1823-1829
 SHOWING PRESENT COUNTY LINES AND MAP NUMBERS

MAP NUMBERS



APPRAISAL OF ROYCE AREAS 147 AND 148

SPRINGFIELD LAND OFFICE

(Comparable Area)

Area	Offered/Sold	Timbered Sections	Land Classes Nontimbered Sections	Total	Sold Percentage	Years on Market (Calendar Years)
		(Acres)	(Acres)	(Acres)	(%)	
I	Offered	512,000	263,040	775,040	22.8	7
	Sold	165,600	11,360	176,960		
II	Offered	211,200	249,600	460,800	9.9	6
	Sold	44,240	1,440	45,680		
III	Offered	381,440	154,240	535,680	13.3	4
	Sold	68,800	2,640	71,440		
IV	Offered	176,640	291,200	467,840	1.0	3
	Sold	4,000	480	4,480		
V	Offered	257,280	149,120	406,400	4.3	1
	Sold	17,200	320	17,520		
Total	Offered	1,538,560	1,107,200	2,645,760	11.9	
5 Areas	Sold	299,840	16,240	316,080		

Note: 1. The "surveyor's timber" sections which contain no timber but timber indicated on original survey are included.
 2. The acres are estimated by 80 acres x No. 80 - acre tracts.
 3. Number of 80 - acre tracts sold in each section shown by blue blocks on each of the following maps.

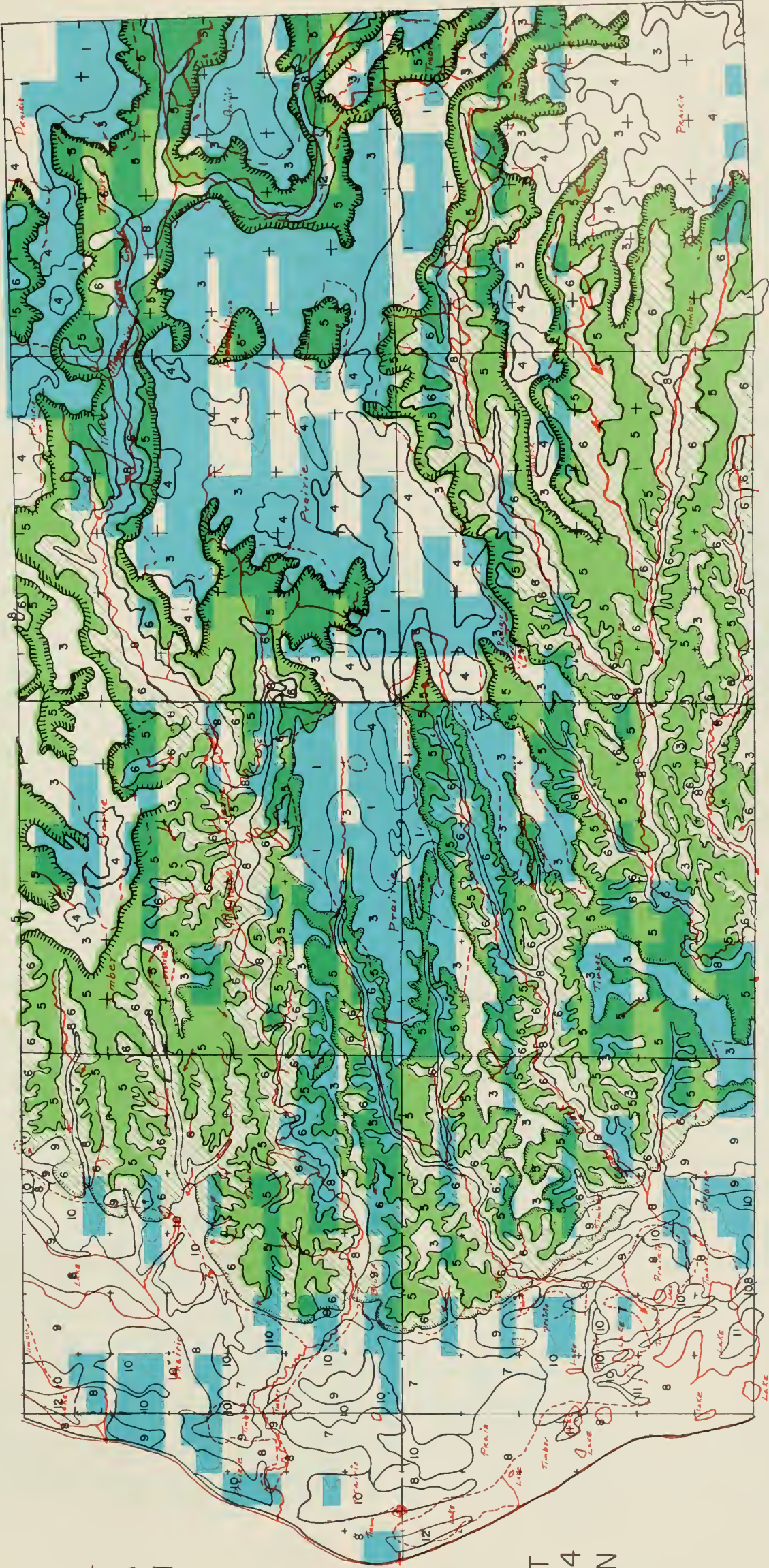
Walter R. Kuehnle — 1958

SPRINGFIELD LAND OFFICE

AREA OFFERED FOR SALE NOVEMBER 17-1823.

- CODE
- SOIL CLASSIFICATION AS DEFINED IN CHAPTER 2
- TIMBER SOILS
- TIMBER LINES AS SHOWN ON ORIGINAL LAND SURVEYS
- RIVERS + STREAMS AS SHOWN ON ORIGINAL LAND SURVEYS
- PROPORTION OF SECTION SOLD

MAP I-1



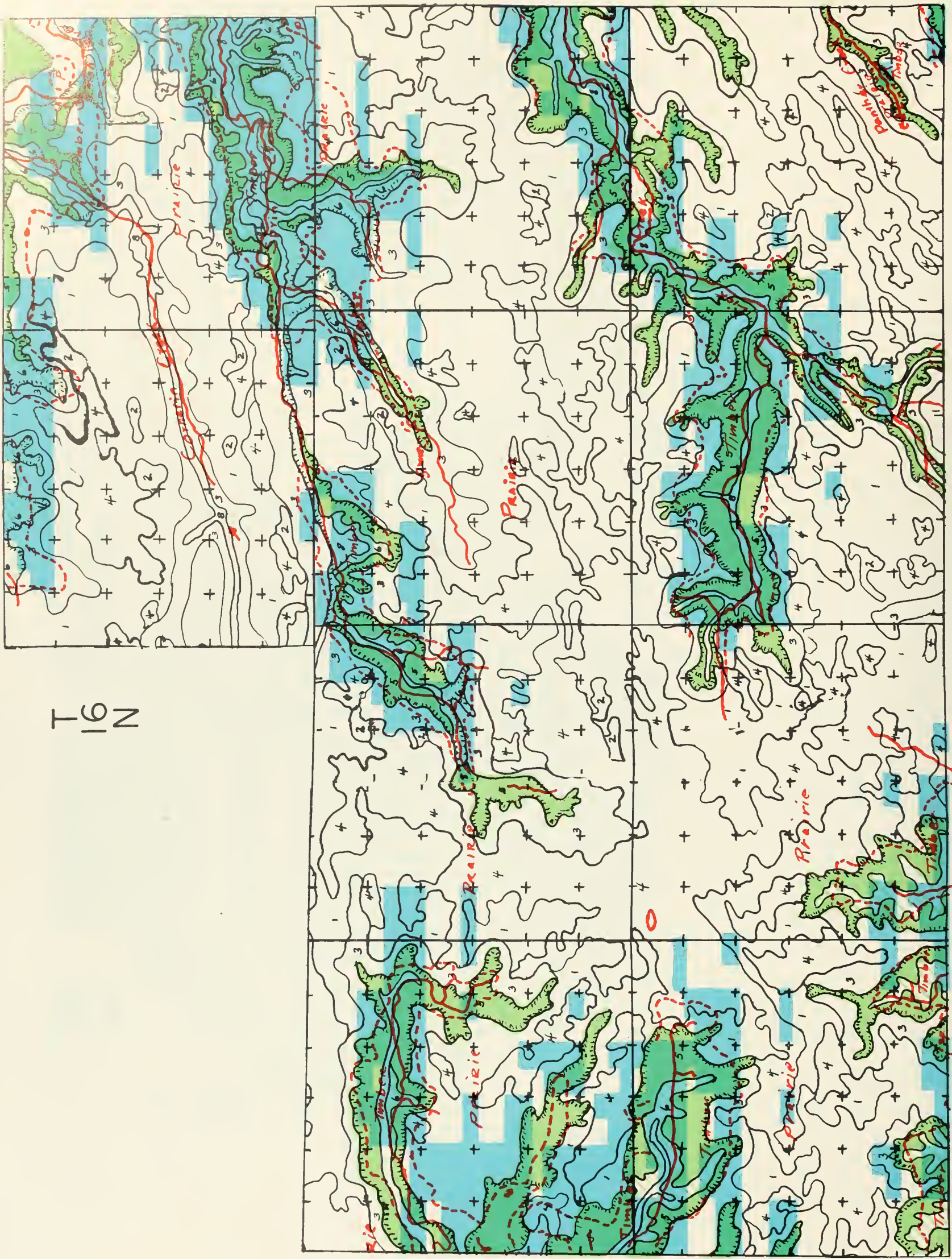
R14W

R13W

R12W

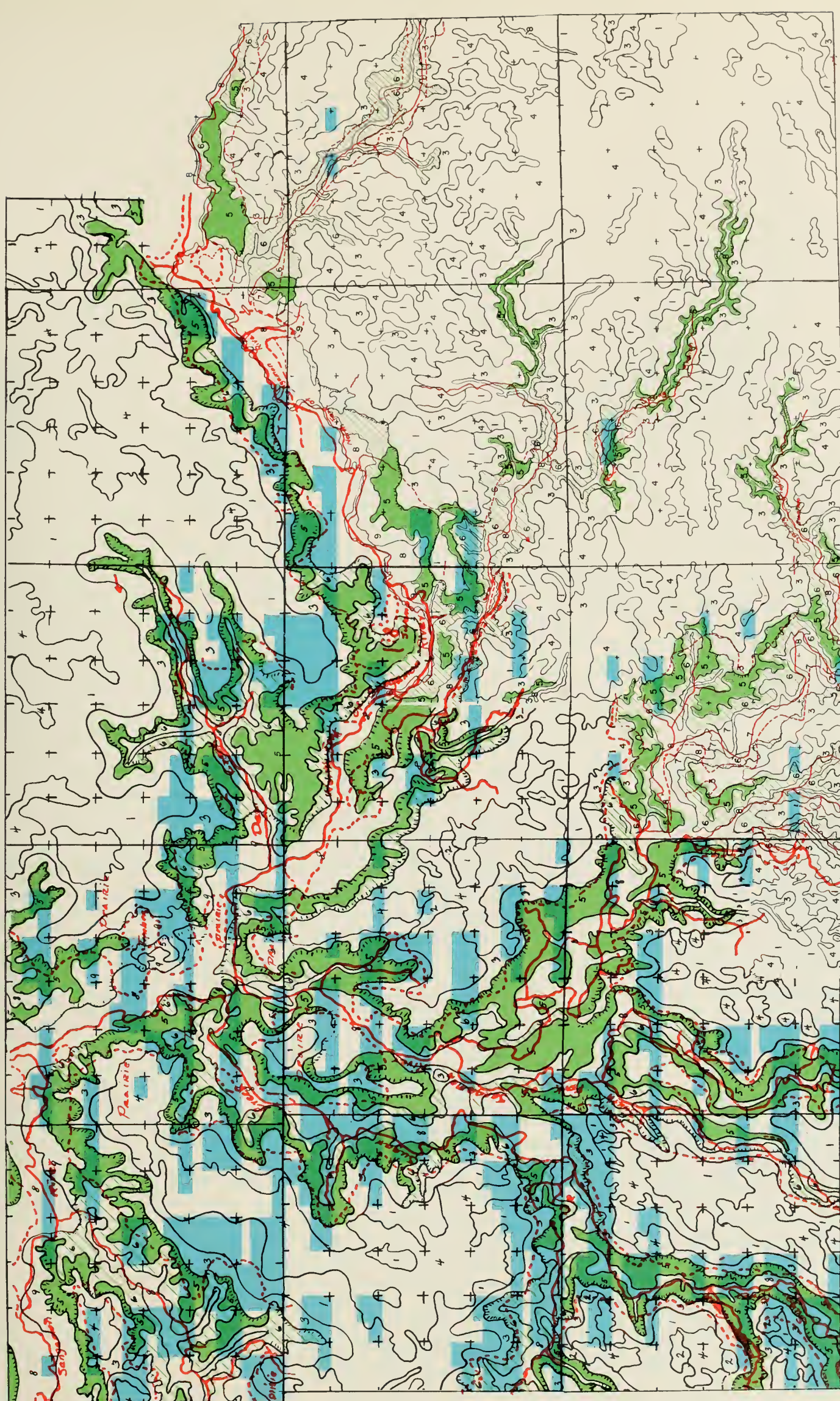
R11W

R10W



R9W R8W R7W R6W

MAP I-3



R5W

R4W

R3W

R2W

R1W

T6N

T5N

T4N

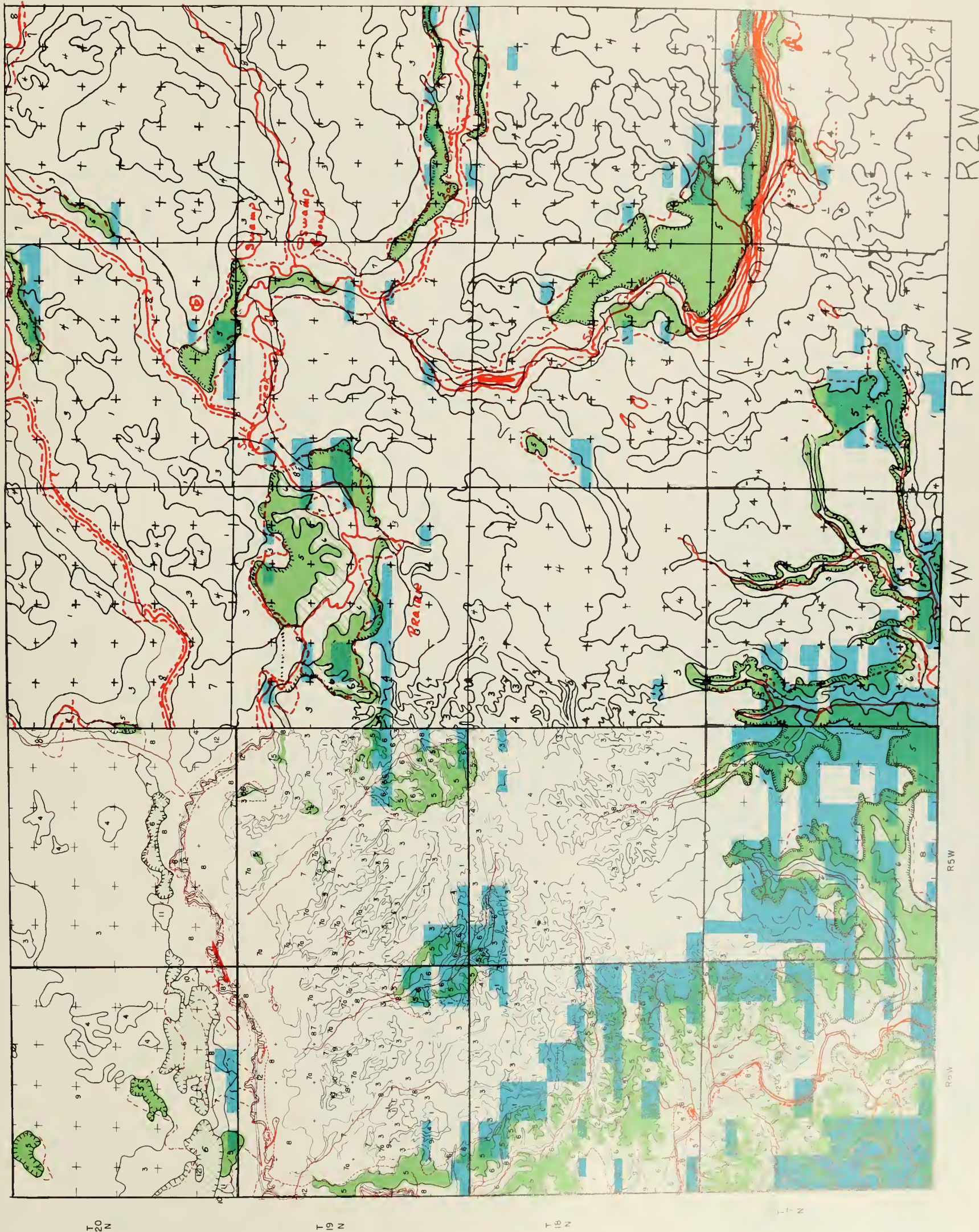


SOIL MAPS GR. II
SPRINGFIELD LAND OFFICE

AREA OFFERED ON SALE NOVEMBER 1-1824

- CODE
SOIL CLASSIFICATION AS DEFINED IN CHAPTER 2
TIMBER SOILS
TIMBER LINES AS SHOWN ON ORIGINAL LAND SURVEYS
RIVERS + STREAMS AS SHOWN ON ORIGINAL LAND SURVEYS
PROPORTION OF SECTION SOLD

MAP II-1

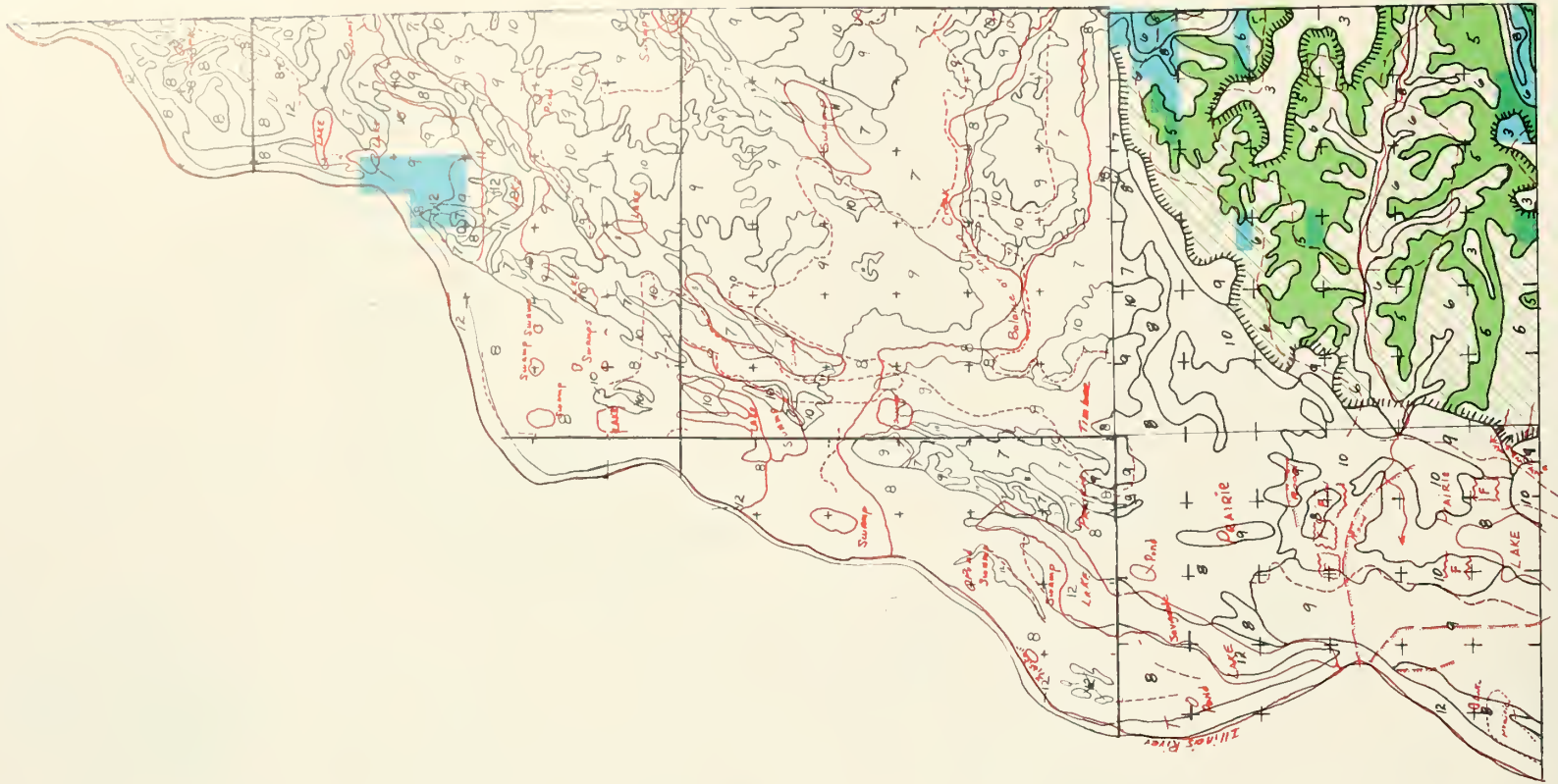


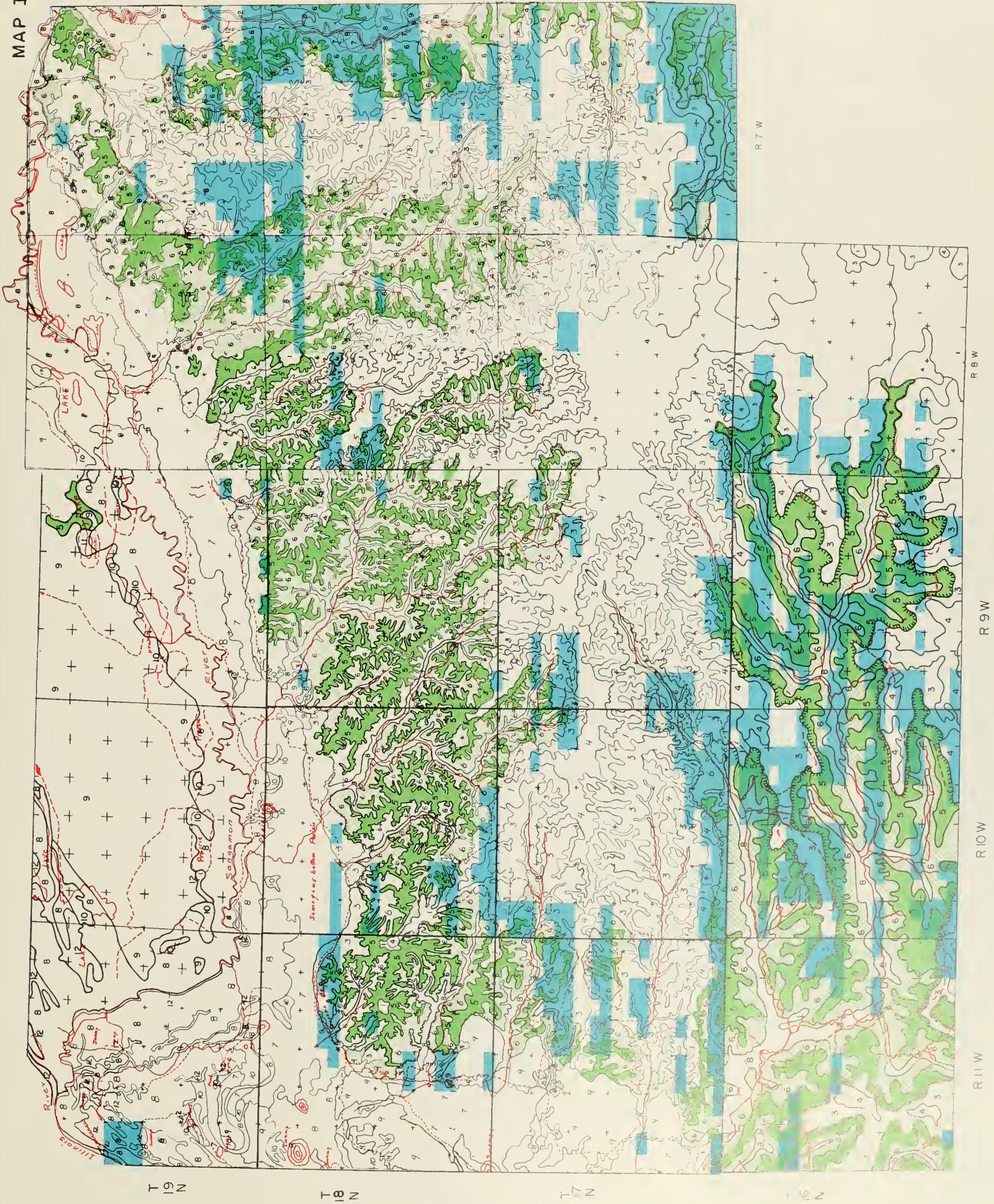


SOIL MAPS GR. III
SPRINGFIELD LAND OFFICE
AREA OFFERED FOR SALE NOVEMBER 25-1826

- CODE
SOIL CLASSIFICATION AS DEFINED IN CHAPTER 2
TIMBER SOILS
TIMBER LINES AS SHOWN ON ORIGINAL LAND SURVEYS
RIVERS + STREAMS AS SHOWN ON ORIGINAL LAND SURVEYS
PROPORTION OF SECTION SOLD

MAP III





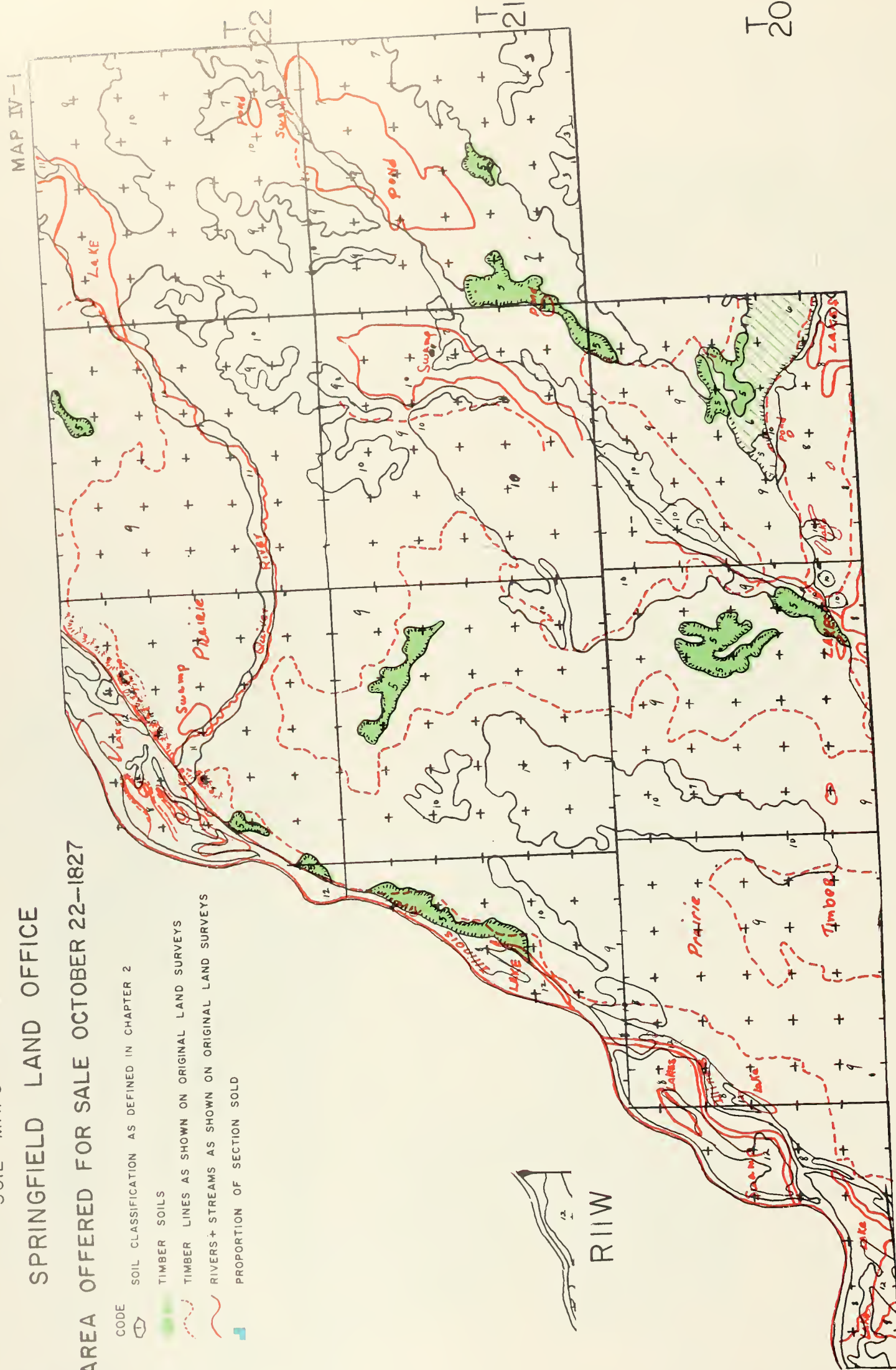


SOIL MAPS—GR. IV

SPRINGFIELD LAND OFFICE

AREA OFFERED FOR SALE OCTOBER 22--1827

- CODE
- SOIL CLASSIFICATION AS DEFINED IN CHAPTER 2
 - TIMBER SOILS
 - TIMBER LINES AS SHOWN ON ORIGINAL LAND SURVEYS
 - RIVERS+ STREAMS AS SHOWN ON ORIGINAL LAND SURVEYS
 - PROPORTION OF SECTION SOLD



RIIW

T 20

R6W

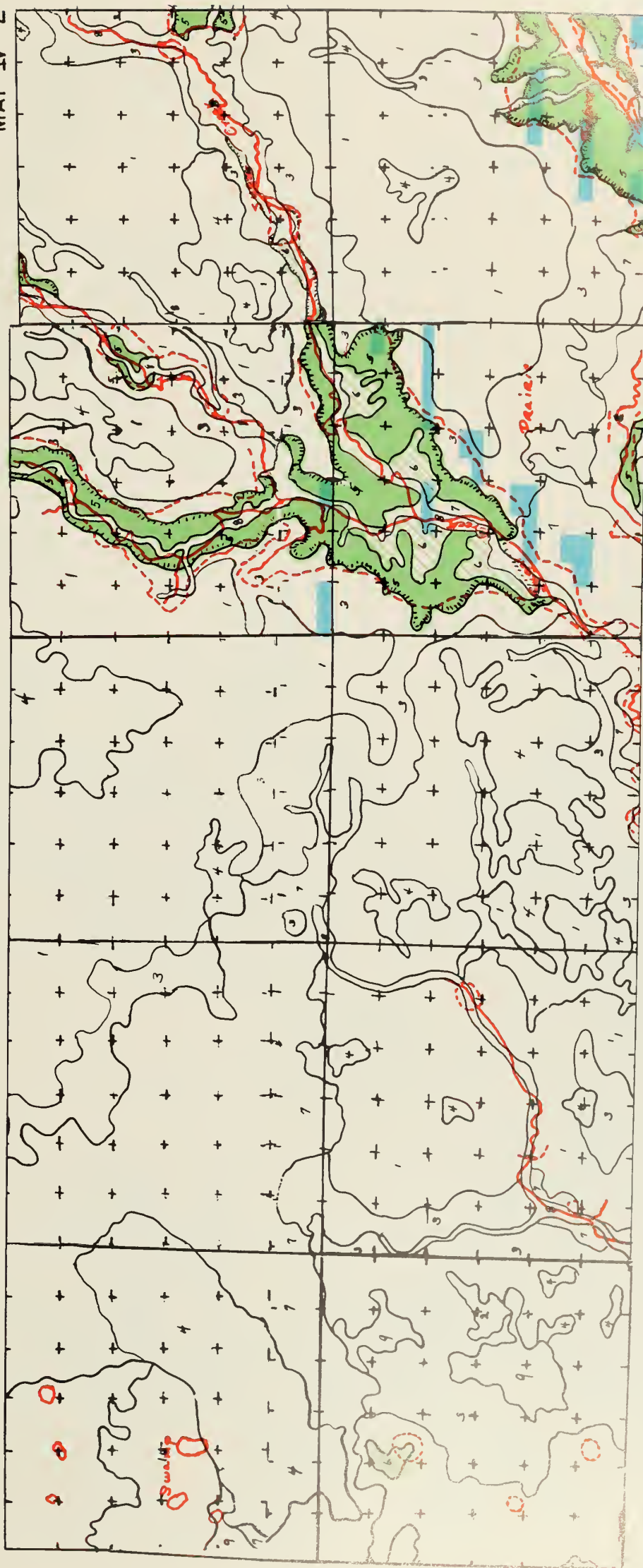
R7W

R8W

R9W

R10W

MAP IV-2



R1W

R2W

R3W

R4W

R5W

T 22 N

T 21 N

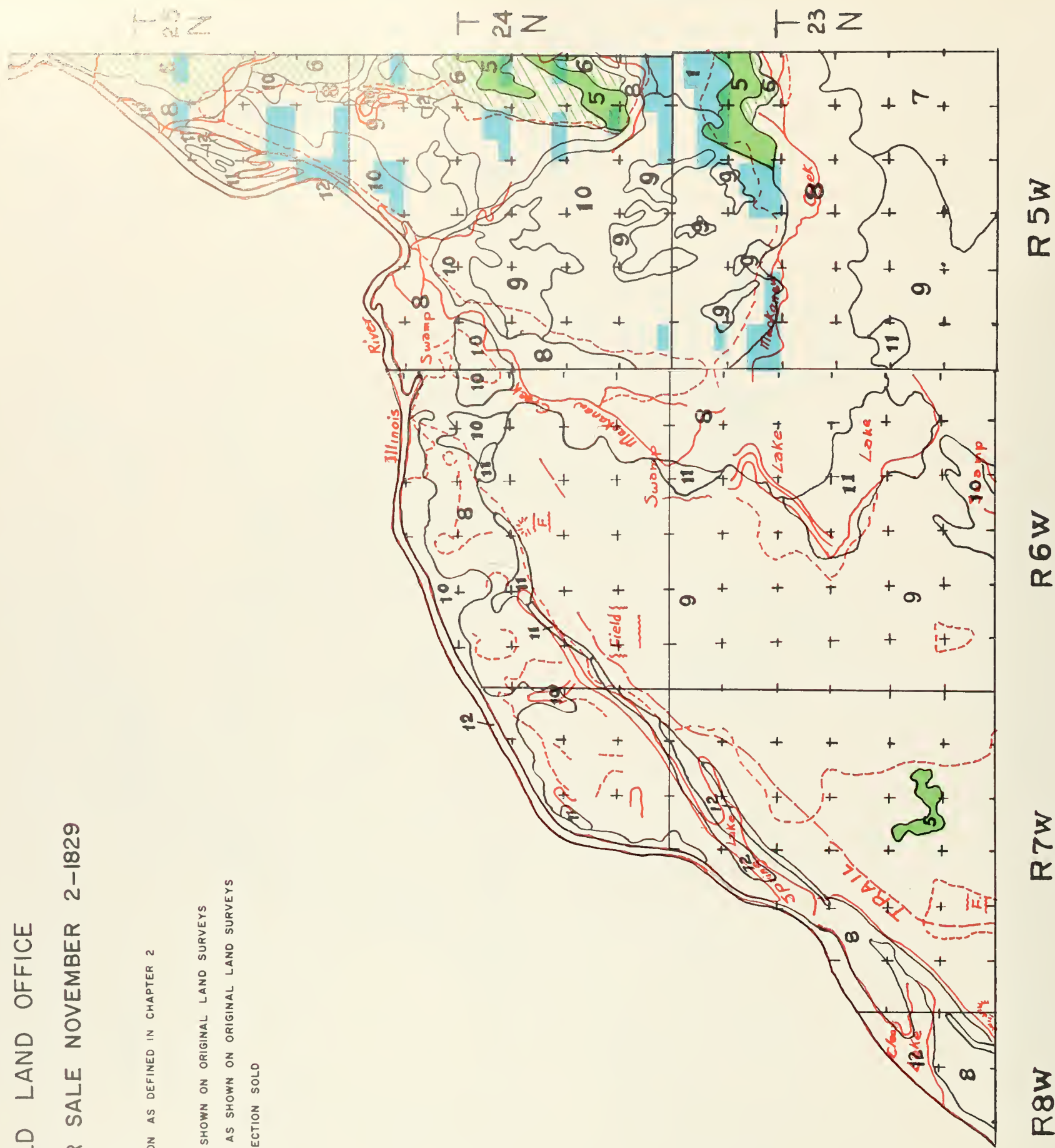
MAP

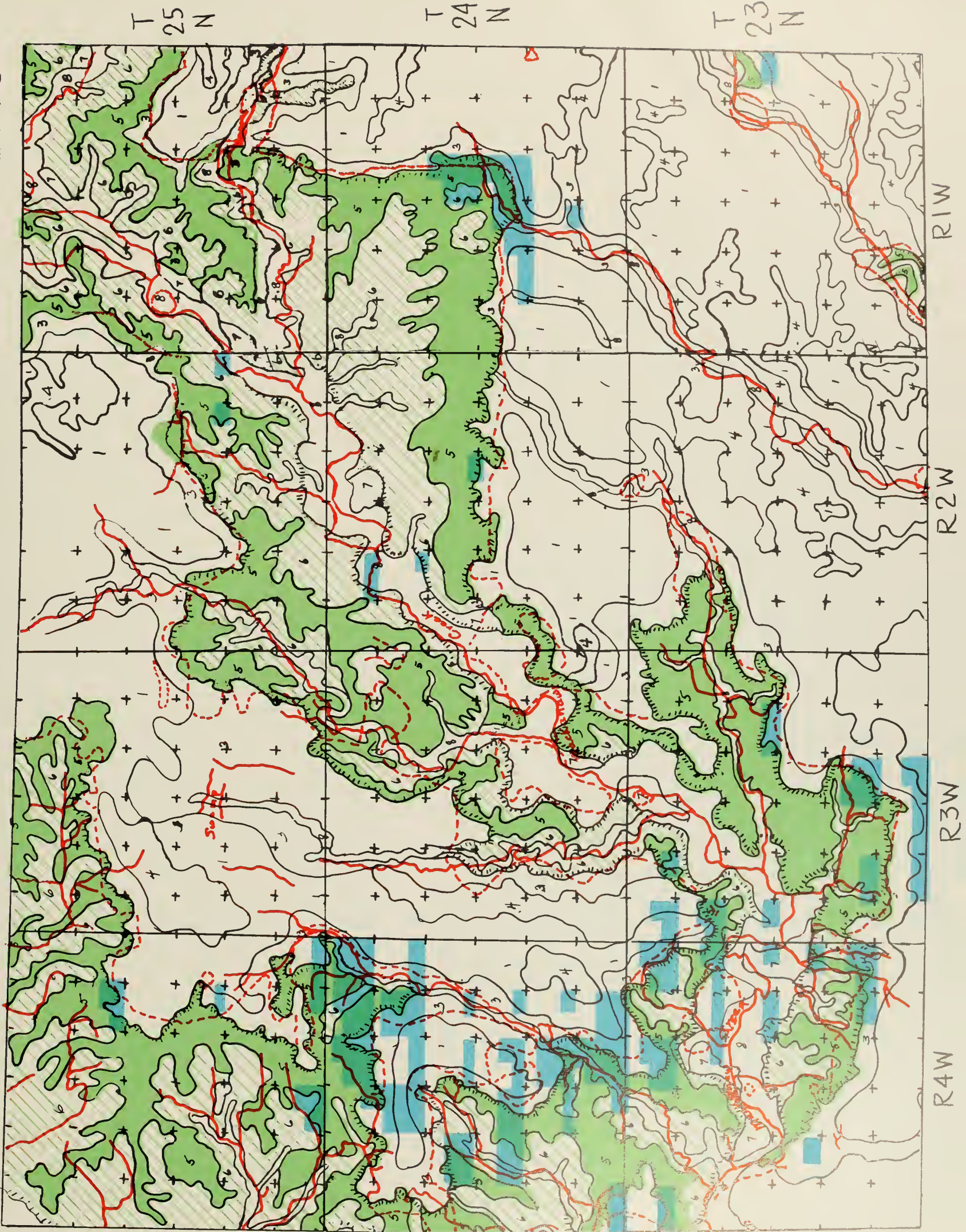
AREA OFFERED FOR SALE NOVEMBER 2-1829

SOIL CLASSIFICATION AS DEFINED IN CHAPTER 2

①

①





Chapter 9

THE ILLINOIS - MICHIGAN CANAL - SALES OF CANAL LANDS — PREFERRED LAND TYPES

In 1829 the State of Illinois owned 289,000 acres of land along the right-of-way of a proposed canal to connect the Mississippi River through the Illinois and Chicago Rivers with Lake Michigan. This land was in alternate sections in a strip five miles wide on either side of the proposed canal, and was given to the State by the Federal Government for the purpose of raising funds for its construction. The government retained the alternate sections and the balance of the total tract which was twenty miles wide. Original efforts by the Trustees of the Canal to sell lands were made in 1829 and some sales were made in 1830. The amount and type of these lands, superior in locational advantages to the lands of Area 148, casts further light on demand for land and settler preferences as to land types at the time.¹

Development of Enthusiasm for Canals

The completion and operation of the Bridgewater Canal in England in 1761 suggested the use of artificial waterways in the United States. After the War of 1812 Americans began to seek means of improving transportation. An increasing number of new turnpikes and steamboats were built, but this did not solve this main problem of cheaper transportation connecting the old East with the new West. Cheaper transportation was supplied by the great rivers, most of which lay north and south, leaving the round-about New Orleans river-route or the expensive Trans-Allegheny Mountain wagon transport to carry east-west cargoes over such parts of the national road as were then completed.² By the year of 1816 only 100 miles of canals had been completed, the longest of which was only 28 miles long. In 1817 the 365-mile Erie Canal was launched to connect Buffalo, New York and Lake Erie.³ An unprecedented engineering feat, it was completed in 1825 at a cost of \$8,400,000, and a cheap transportation route between the East and the old Northwest Territory was accomplished. The canal was profitable as it cut substantially both the time and the cost of east-west freight transportation.

It was the success of the Erie Canal that triggered the American boom in canal construction, and a wave of enthusiasm for canal building swept the country. Three types of canals were constructed: (1) those connecting tidewater and up-country east of the Alleghenies; (2) those like the Erie connecting the Atlantic states with the Ohio Valley; and (3) those dug in the West to connect the Great Lakes with the Ohio-Mississippi River system. (See Figure 9-1.) In 1826 Pennsylvania began her eight year job of building a \$10 million 394-mile canal and portage system to rival the Erie as a second-class canal by hurdling the 2,200 foot elevation of the Allegheny Mountains.

In the third class of canals, linking the Ohio-Mississippi River system and the Great Lakes, numerous canals were either completed, under construction or were being planned in Ohio in 1829. At the time the Illinois-Michigan Canal was being planned in Illinois, Wisconsin and Indiana were also planning canals.

Financing Canal Construction

The financial success or failure of the canals was influenced by a number of factors. The fixed investment was high. Whereas stone turnpikes could be built at a cost of \$5,000 to \$10,000 per mile, the cost of canals ran from \$20,000 to \$30,000 per mile. In addition, the cost of canal maintenance was high. Size, efficiency and volume of traffic all had a bearing on the profit or loss in operation.⁴ Because canals were expensive to build, a great deal of capital was needed to finance their construction. Turnpike companies could be launched with a capital of a few hundred thousand dollars, while canals cost up to five and even ten million dollars. Sufficient reserves for venture capital in such amounts had not yet been amassed in this country. The result was that canals were principally financed directly by the state governments which often both owned and controlled them. Even when the canals were built and run by private enterprise, they were financed largely by the

¹ Act of March 2, 1827, 4 Stat. 234.

² Faulkner, Harold U., c. 1938 — American Economic History, 4th ed., Harper, New York, pp. 334 - 335.

³ Taylor, George Rogers, c. 1951—The Transportation Revo-

lution, 1815 - 1860 (The Economic History of the United States, v. 4), Rinehart, New York, pp. 32 - 33.

⁴ Ibid. Taylor, pp. 53 - 54.

State. The genius of the Erie Canal lay not only in engineering, but also in finance. New York demonstrated that such projects could be financed through the issuance of state bonds, and the profitableness of the Erie Canal gave confidence to investors abroad as well as in the United States.⁵

lion dollars, and between 1816 and 1840 more than 3,000 miles of canals were built, after which the canal expansion ended and most states which had built them were in financial difficulty.⁷ About 125 million dollars had been spent on canal building between 1816 and 1840.⁸

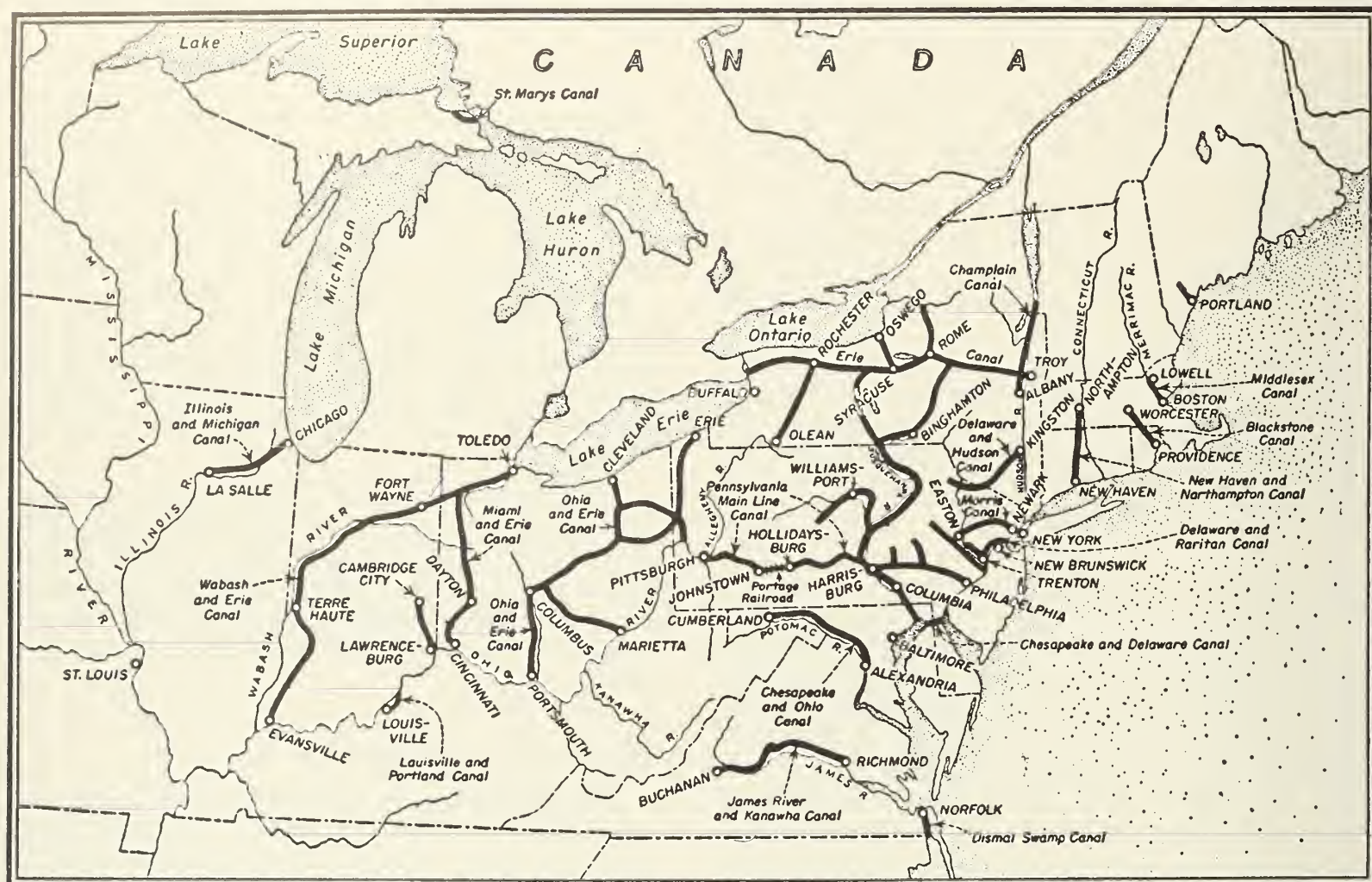


FIGURE 9 - 1 Principal Canals Built by 1860.

Source: Taylor, George Rogers — 1951, *The Transportation Revolution, 1815 - 1860*, p. 35.

Concerning the financing of Ohio's first (class-three) canal, the Miami and Erie connecting the Erie Canal via Lake Erie with the Ohio River, a contemporary observer makes the following statement:

The funds for the prosecution of these improvements have heretofore been obtained without difficulty and none is now anticipated. In the year 1825 the sum of \$400,000 was borrowed at less than 6% per annum. In 1826, \$1,000,000 was obtained on terms nearly as favorable.⁶

From 1805 to 1835 British investments in the United States increased from 20 million to 70 mil-

Canals in Ohio in 1829

In 1829 Ohio had a population of over 900,000 persons, and served as a gateway to the old Northwest Territory through the Ohio - Mississippi River system. The population served was sufficient to economically support a class three canal system, which not only connected the already large population of Ohio itself with the East by cheap transportation, but also connected the East with the frontier through the Erie Canal and the Ohio-Mississippi River system.

⁵ Ibid. Taylor, pp. 48 - 49.

⁶ Drake, B. and Mansfield, E. D., 1827 — Cincinnati in 1826 — p. 18.

⁷ Studenski, Paul, and Kroos, Herman E., 1952 — Financial

History of the United States. McGraw Hill, New York—p. 102f.

⁸ op. cit. Taylor, 1951 — *Transportation Revolution, 1815 - 1860* — p. 52.

Ohio received grants of 1,230,000 acres of land from the Federal Government, by Act of May 24, 1828, and was constructing a network of canals in the state, segments of which were open for traffic as early as 1827, giving powerful stimulus to her local trade.⁹ The Miami and Erie Canal, which connected Toledo on Lake Erie with Cincinnati on the Ohio River, was opened to traffic in 1828, and thereafter local construction continued at an increasing rate.¹⁰ The Ohio and Erie Canal, between Cleveland on Lake Erie to Portsmouth on the Ohio, was authorized in 1825, at the same time as the Miami - Erie Canal. However, it was to take eight years in completion.¹¹

A student of the canal era will inevitably conclude that Ohio, having the earliest development of the western states, had twenty to thirty years' advantage in its early canal construction over Indiana, Illinois and Wisconsin which were to eventually complete their canal systems at, or close to, a time when the railroads would make them obsolete. Indiana, Illinois and Wisconsin were also planning canals in 1829. In Indiana the Wabash and Erie was to be 450 miles in length, the longest in the United States, connecting the Ohio River at Evansville with Lake Erie via the Miami and Erie Canal. In Wisconsin it was planned to connect Lake Michigan with the Mississippi River, via the portage at the Fox and the Ouisconsin Rivers.

The Illinois - Michigan Canal

In Illinois south of Area 148, the probability of the realization of the dream of a connecting waterway between Lake Michigan and the Mississippi River, via the Illinois River, was given substance without certainty of schedule, for either its commencement or completion, by a government land grant to the State in 1827 of alternate land sections along its right-of-way (see Map 9-1). It is historically recorded that the idea for this canal originated with M. Louis Joliet in 1673.¹²

The first step toward realization of the Illinois River - Lake Michigan canal was taken on August 24, 1816, two years before Illinois became a state, when by a treaty at St. Louis¹³ the Potawatomes relinquished their claim to Illinois land between the Illinois and Mississippi Rivers¹⁴ and to an additional strip of land 20 miles wide from Ottawa, Illinois to Chicago, covering the navigable route to the junction of the

Illinois and the Desplaines Rivers and the portage of the Chicago River.¹⁵

The first scientific exploration of this route was made soon afterward by Major Stephen H. Long, U.S.A., who ascended the Illinois River to the Lake of Peoria in a small keelboat. The river was sluggish and filled with fields of wild rice, which rose several feet above the river bed. When he reached Chicago he found a river of that name discharged itself into the lake over a bar of sand and gravel in a rippling stream ten to fifteen yards wide and only a few inches deep. The Little Calumet River, about fifteen miles south of Chicago entered the lake but at that time was effectively blocked by a high and dry sand bar.¹⁶

Early Planning for the Illinois - Michigan Canal

It is understandable that the as yet sparse population of 157,000 in Illinois faced generally with the problem of inaccessibility to markets, should turn with enthusiasm to the proposal, for what has previously been described as a Class 3 canal, to connect Lake Michigan with the Mississippi River.

In 1818 when Illinois became a State, Governor Thomas Bond made a proposal for a preliminary survey of the proposed canal lands along the route. It was not until 1822, however, that the Congress of the United States first granted to the State of Illinois the right to cut a canal through public lands, donating to the State ninety feet on each side of it. The United States also donated \$10,000 for surveys. In return the State was to permit all articles belonging to the United States or its employees to pass through the canal toll free, forever.¹⁷

The Honorable Edward Coles, then Governor of Illinois, urged this improvement and also advocated the opening of communication with Lake Erie, via the Wabash River through Indiana and the Maumee in Ohio. In 1824 Col. Rene Paul of St. Louis made a survey of five different routes for the canal and estimates of construction cost ranged from \$639,946 to \$716,110. It was in 1825 that an act was passed in Illinois to incorporate the "Illinois and Michigan Canal Company." This act provided for a canal 13 - 1/2 feet wide, drawing 3 feet of water, and tolls were to be established at 1 - 1/2 cents per mile per ton. However, the efforts to organize a working company failed due

⁹ Bogart, Ernest Ludlow, 1924 — *Internal Improvements and State Debt in Ohio*. Longmans, Green & Company, New York pp. 36 - 37.

op. cit. Berry, 1943 — *Western Prices Before 1861* — p. 410.

¹⁰ Ibid. Berry, p. 410.

¹¹ op. cit. Faulkner, 1938 — *American Economic History* — pp. 277 - 282.

¹² "Relations" of Father Dablon — *Historical Magazine*, p. 237.

¹³ 7 Stat. 146.

¹⁴ Area 77, Illinois 2.

¹⁵ Area 78, Illinois I.

¹⁶ op. cit. Andreas, 1884 — *History of Chicago*, Vol. I, p. 166.

¹⁷ Act of March 30, 1822, 3 Stat. 659.

to the "fluctuating money market". Although the more strategically located Miami - Erie Canal, in Ohio, was able to borrow one million dollars in 1826, as previously stated, it was impossible to obtain a loan in that same year for the construction of the Illinois - Michigan Canal. Thereupon, in 1827, the United States granted to the State of Illinois alternate sections in a strip of land five miles wide on either side of the canal. (See Map 9 - 1.) In 1828 another Illinois law was passed, providing for the sale of lots and lands and for the appointment of a board of land commissioners and commencement of the work. However, capital to pursue this improvement was lacking and nothing further was done by the legislature to aid this project for two years. In 1829 a new act provided for the appointment of three commissioners with the right to establish towns along the surveyed route. In this year they platted the town of Ottawa at the junction of the Fox River with the Illinois.¹⁸

Sale of Canal Lands

On December 22, 1829 the Commissioners offered approximately 104,000 acres of these canal lands for sale to the highest bidder, with a minimum price of \$1.25 per acre. The sale was scheduled to take place at Springfield, Illinois on April 19, 1830. (See Figure 9 - 2.) At this sale and during the remainder of the year of 1830, approximately 9,600 acres of these lands were sold. With seven exceptions, all lands were sold at the minimum price of \$1.25 per acre. These exceptions, consisting of a total of 592.40 acres, were in the immediate vicinity of Chicago and sold at \$1.44, \$1.55, \$1.63, \$1.75, \$1.93, and \$5.00(2) per acre. 560 additional acres were sold during the period January to March of the year 1831. The approximate amount of \$11,800, realized from the small sale of lands effected at this time, indicated that it would not produce the sums needed to finance the construction of of the canal.¹⁹

The rise in elevation between Lake Michigan and the Desplaines River, and the presence of rock near the surface of the ground, were to pose difficult and discouraging problems in the construction of the canal. It was in 1833 that the discouraging discovery was made that it would require an estimated \$4,043,000 to construct the canal and that there was neither the money nor the credit to complete an improvement of such financial magnitude in a thinly settled Western State.²⁰ By 1829 the Illinois - Michigan Canal had reached the planning stage, but it had to await

the development of Illinois with the orderly westward progression of supporting settlement and population. While the idea of the canal was sound, it was premature in 1829. "The old lesson containing as its moral the hopelessness of premature enterprise was being taught to the young state (Illinois) by that stern master experience."²¹

Public Sale of Lands
LYING ON THE
ILLINOIS AND MICHIGAN
CANAL.
Office of the Commissioners of the Illinois and Michigan Canal, Dec. 22, 1829.

UNDER the superintendence of the undersigned, Canal Commissioners, there will be exposed at **PUBLIC AUCTION**, in the town of Springfield, county of Sangamon, and state of Illinois, on **Monday the 19th day of April, 1830.**

A portion of the Lands lying on the route of the Illinois and Michigan Canal, selected by the undersigned, in pursuance of an act of the Legislature of said State, entitled "An act to provide for constructing the Illinois and Michigan Canal," approved January 22, 1829, and which lands are granted to the State of Illinois, by an act of Congress, entitled "An act to grant to the State of Illinois, for the purpose of aiding her in opening a Canal to connect the waters of the Illinois River with those of Lake Michigan," approved March 2, 1827, as follows: viz.

Sections 1, 3, 5, 11, in Township 32 North, Range 2 East. All the sections designated by odd numbers in Town 32 N. R. 2 E. except sections 15 and 17, at present reserved from sale. Sections 19, 21, 23, 25, 27, 29, 31, 33, 35 in Town 34 N. R. 2 E. Sections 3, 5, 7, 9 in Town 32 N. R. 3 E. All the sections designated by odd numbers in Town 33 N. R. 3 E. except section 11, at present reserved. Sections 13, 15, 21, 23, 25, 27, 29, 31, 33, 35, in Town 34 N. R. 3 E. Sections 1 and 3 in Town 32 N. R. 4 E. All the sections designated by odd numbers in Town 33 N. R. 4 E. Sections 17, 19, 21, 23, 25, 27, 29, 31, 33, 35 in Town 34 N. R. 4 E. Sections 1, 3, 5, 7, 9, 11, 13, 15 in Town 32 N. R. 5 E. All the sections designated by odd numbers in Town 33 N. R. 5 E. Sections 29, 31, 33, 35, in Town 34 N. R. 5 E. Sections 1, 3, 5, 7, 9, in Town 32 N. R. 6 E. All the sections designated by odd numbers in Town 33 N. R. 6 E. Sections 13, 21, 23, 25, 27, 29, 31, 33, 35, in Town 34 N. R. 6 E. All the sections designated by odd numbers in Town 33 N. R. 7 E. except section 35, not selected. All the sections designated by odd numbers in Town 34 N. R. 7 E. except sections 3, 5, 7, not selected.

The sections contain, in general, 640 acres, and will be sold in tracts of 80 or 160 acres, or in fractional sections, as the Public Lands are sold, at a price not less than *One Dollar and Twenty-five Cents* per acre, in cash, to be paid at the time of purchase. Good titles will be, in all cases, made to the purchasers. The sales will be continued from day to day until all shall have been offered, after which, those not sold will be subject to entry at the Treasurer's Office.

The above Lands, besides lying on, and within five miles of a Canal of 100 miles in extent, and which is regarded as a continuation of the New-York Canal, possess other important advantages. They are, the most fertile, of the best quality for agricultural operations, and equal in fertility to the best Illinois Lands. In addition to the water-power afforded by the Rapids, and falls of the different streams, their banks furnish good timber, building-rock, and stone coal, besides inexhaustible quantities of the best kind of slate. The country is watered by the Du Page, Fox, Sangamon, and Little Vermilion, and Fox Rivers, all discharging themselves into the Illinois, besides other smaller streams. Few portions of the United States possess more permanent, or greater natural advantages than this, and an opportunity is now offered to capitalists, and others, to make investments, that must speedily yield a handsome return.

EDMUND ROBERTS, } Canal
GERSHOM JAYNE, } Commissioners.
CHARLES D'ARCY, }

By order of the Board:
SINNEY BREES, Sec'y pro tem.
Jan. 25 - 28/30

FIGURE 9 - 2 Advertisement in Galena Adv. 1-25-1830.

Types of Canal Lands Sold

As in the case of the 1829 sales of land in the Springfield Land Office and in the Military Tract, as discussed in Chapters 7 and 10, sales of canal lands in 1830 showed the same pattern of preference for land in timbered sections and the same avoidance of prairie. Of approximately 104,000 acres offered, outside of Township 39 North Range 14 East, which was adjacent to the site of Chicago, approximately 9,600 acres were sold in 1830, of which only 480 acres were in sections containing no timber. Of the land offered

¹⁸ Ibid. Andreas, p. 167.




¹⁹ Ibid. Andreas, Chicago, Vol. 1 — p. 172.

²⁰ Ibid. Andreas, pp. 169 - 172. Actually the canal was completed in 1848 at a cost of approximately \$7 million (cost

\$5,139,492 to 1843 plus \$1,600,000 loan in 1845) on a modified or "shallow cut" plan.

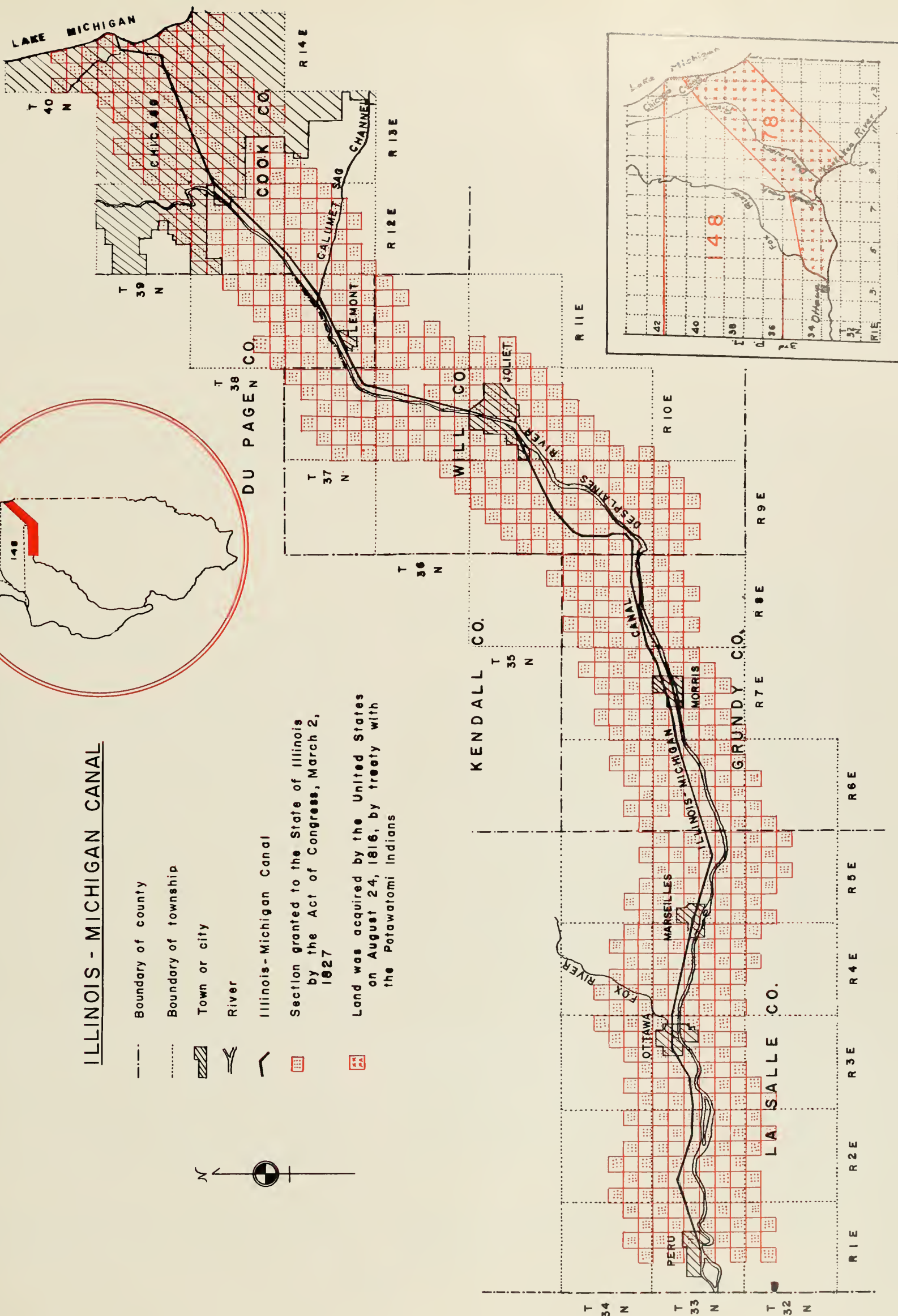
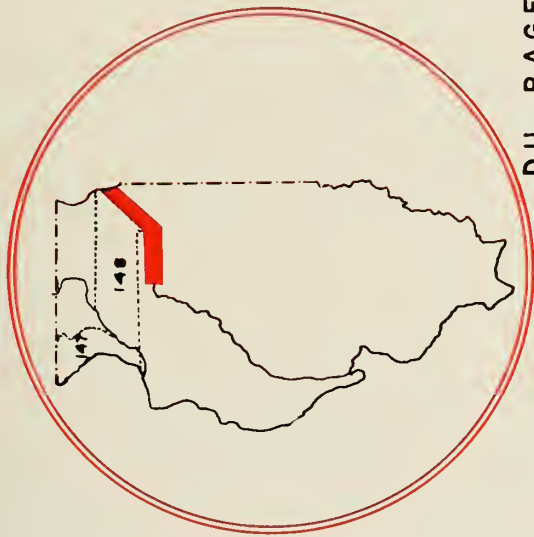
²¹ Ibid. Andreas, p. 169.

ILLINOIS - MICHIGAN CANAL

- Boundary of county
- Boundary of township
-  Town or city
-  River
-  Illinois-Michigan Canal

Section granted to the State of Illinois by the Act of Congress, March 2, 1827

Land was acquired by the United States on August 24, 1816, by treaty with the Potawatomi Indians



ILLINOIS - MICHIGAN CANAL - SALES OF CANAL LANDS

in non-timbered sections, only 2% was sold. In sections 35% or more timbered, 13% to 18% of the land offered in 1830 was sold. (see Table 9 - A.)

Again in order to graphically portray this preference for land in timbered sections, a four - color soil and timber map has been prepared (see Map 9 - 2.) This map shows the soil and timber, as indicated by soil maps, timber lines and other notations, as shown on the original U.S. land surveys, and the location of 1830 sales made by the Canal Trustees.²²

\$11,800 secured from the sale of land by the Canal Trustees, during the year of 1830, did not indicate that the sale of canal lands would be a significant factor in defraying the eventual \$7,000,000 cost of completing this canal. Actually, the first costs of the construction of this canal were financed in 1835 through state bonds.

Except for a few sales of canal lands in the immediate vicinity of the site of Chicago, only 9% of the offered lands were sold. The buyers were highly

Table 9 - A
Amount of Land Offered for Sale in January 1830, and Amount Sold by the Trustees of Illinois - Michigan Canal
The Percentage Sold Classified by Percentage of Timber, and Well-Drained Fertile Prairie - Sails

Percentage of 1-2-3 Percentage of Timber	0 %			5 - 30%			35 - 65%			70 - 100%			Total		
	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage	Acres offered	Acres sold	Sale percentage
0 %	3840	480	13 %	1920	0	0 %	2560	0	0 %	22400	0	0 %	30720	480	2 %
5 - 30	11520	1840	16	3200	560	18	1920	0	0	20480	1440	7	37120	3840	10
35 - 65	4480	960	21	3840	320	8	4480	1040	23	--	--	--	12800	2320	18
70 - 100	13440	2160	16	10240	800	8	--	--	--	--	--	--	23680	2960	13
Total	33280	5440	16 %	19200	1680	9 %	8960	1040	12 %	42880	1440	7 %	104320	9600	9 %

Notes: 1. Exclusive of 3,840 acres offered of which 600 acres were sold in Township 39 North, Range 14 East which is proximate to the site of Chicago. (See Map 9-1)

2. An Additional 560 acres were sold in 1831

Walter R. Kuehnle - 1958

Summary

After the War of 1812, Americans, seeking better and cheaper transportation between the East and the old Northwest, began thinking of canals as a means to meet this need. By 1829 cheaper transportation by canals was becoming an accomplished fact. The Erie Canal was completed, operating successfully, and substantially reduced the Trans - Appalachian transportation costs between the East and the West. Ohio, which already had a population of over 900,000 in 1829, was in a position to capitalize on this improved accessibility and developed an extensive program for the construction of numerous canals, connecting the Erie Canal and the Great Lakes with the Ohio - Mississippi River system. Some of these canals were completed and under construction in 1829. There were also plans for canals in more sparsely settled Indiana, Wisconsin and Illinois. In Illinois the plan was for the Illinois-Michigan canal, in a 20 - mile strip along the Illinois, Desplaines Rivers and Chicago Portage along the south boundary of Area 148. Although Illinois, with only 157,000 population, was premature with its plans for this canal, in 1829, it was given substance by a United States grant of 284,000 acres of land to help defray the cost of construction. In 1830 approximately 104,000 acres of these lands were offered for sale, by the Canal Trustees, at public auction to the highest bidder, with a minimum price of \$1.25 per acre. Approximate proceeds of

selective and, as elsewhere in Illinois, avoided tracts in sections without timber. None of this land was sold at above the minimum price of \$1.25 per acre.

Due to the proximity of the proposed Illinois-Michigan Canal to the south, and its probable influence in opening northern Illinois for future settlement, a prospective purchaser in 1829 would have examined its status and the probable time of its completion with considerable interest. As an informed person, he would certainly have recognized the essential differences between economic potential for success of a canal in the sparsely settled frontier State of Illinois, as compared to that in more settled Ohio. He would have been warranted in assuming the reasonable probability of such a canal coming into existence, as the progression of population and settlement followed the pattern of Ohio. However, he could not have failed to also realize that the lands granted to Illinois, and those retained by the United States in the twenty - mile wide canal strip, would be superior in location to those of Area 148, to the north, and that they would be the first location preference of settlers if offered. Also, because of its transportation facility, the canal strip would have the strategic locations for the principal cities of northern Illinois. In summary, such a prospective buyer would have assumed that a considerable period of time must necessarily elapse before this

²² The reconstructed soil maps, of the areas in which canal lands were offered and sold in 1830, were constructed exactly the same as Soil Maps in Chapter 1 and Map Series I to V in

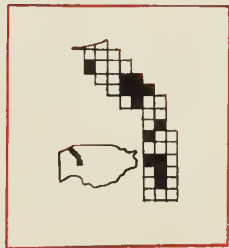
Chapter 8, covering, respectively, the subject area and the Springfield Land Office. Soil classifications used are as described in Chapter 1.

APPRAISAL OF ROYCE AREAS 147 AND 148

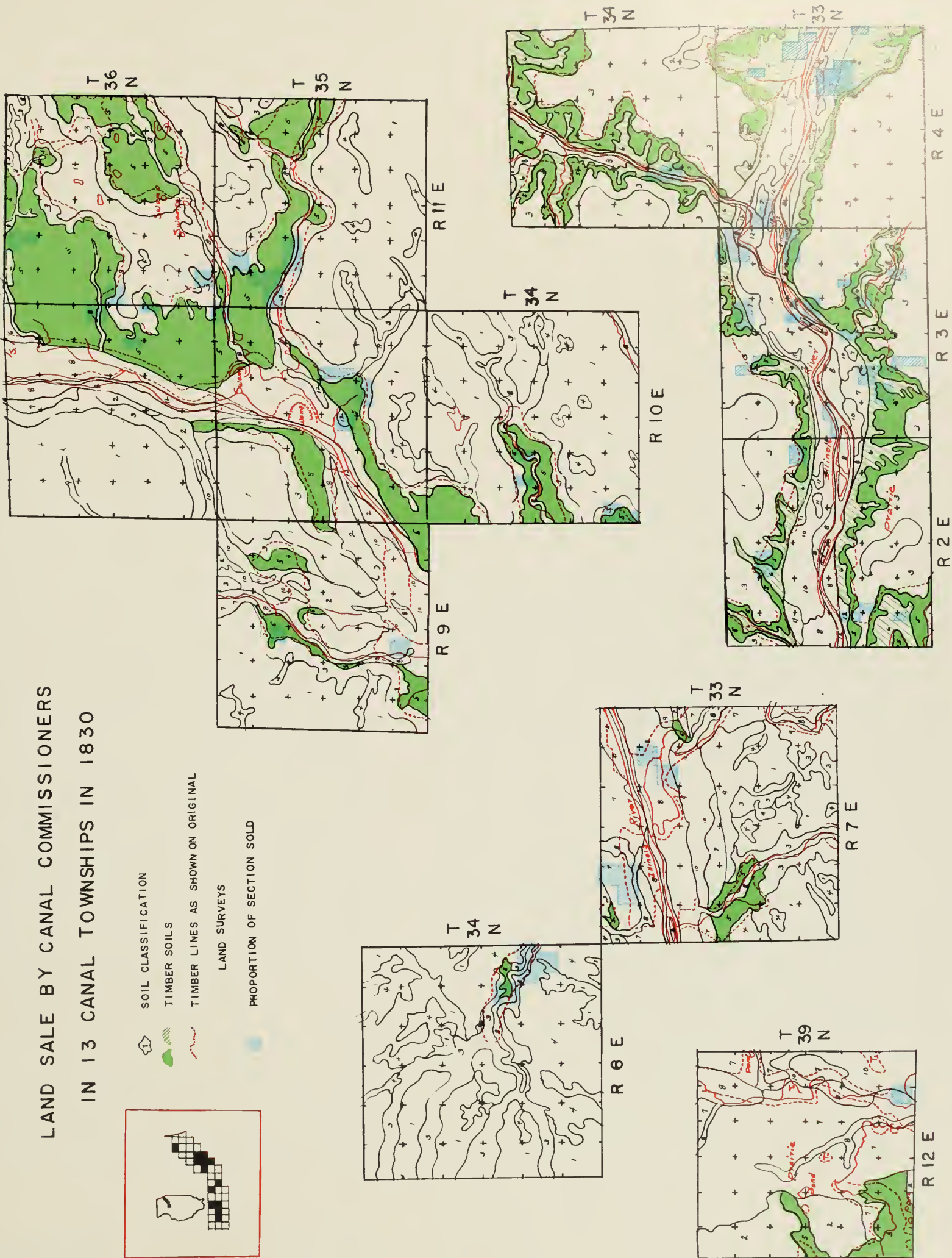
canal could be completed, its more desirable adjacent canal lands sold, and settlers attracted northward, in the numbers in which they came to the Sangamon River area (Springfield Land Office described in Chapter 8) between 1823 and 1829.

The character of the lands sold by the Canal Trustees in 1830 again reflected the lack of marketability of land in untimbered sections, a condition of which the prospective purchaser in 1829 of Illinois lands would have been fully aware.

LAND SALE BY CANAL COMMISSIONERS IN 13 CANAL TOWNSHIPS IN 1830



- SOIL CLASSIFICATION
- TIMBER SOILS
- TIMBER LINES AS SHOWN ON ORIGINAL
- LAND SURVEYS
- PROPORTION OF SECTION SOLD



Chapter 10

PRIVATE LAND SALES IN THE ILLINOIS MILITARY TRACT

Private sales activity up to 1829 in the area of the Illinois Military Tract, illustrates that the \$1.25 per acre price, obtained by the government up to that time for the sale of practically all of its raw lands, was an artificially supported price. It was possible to maintain this price only because the United States controlled the disposition of the lands, and because it was also able to offer to the purchaser the inducement of freedom from taxation by the State of Illinois for a period of five years after their purchase. Speculators bought, sold and traded in a major portion of almost three million acres of land within this tract that had been originally awarded to war veterans as military bounties and had passed from their control. Although the land in the Illinois Military Tract compared favorably in amenities to that in the Springfield Land Office area, prices paid by speculators were low, notwithstanding which they realized losses as well as profits on their investments. The land history of this tract through 1829 is one of demoralized prices, saturated demand, wholesale tax foreclosures, and discouraging experiences by non-resident owners of large holdings and tax sales at incredibly low prices. It is pertinent to the 1829 value of Areas 147 and 148 that here large scale speculation in Illinois lands had occurred up to and through 1829. Accordingly, the history of land speculations in the Military Tract and the sale prices obtained for land in private sales during 1829 would certainly have influenced the price which might reasonably have been paid by an informed investor for the subject lands. A description, discussion and analysis of such sales followed by a conclusion as to indicated comparative 1829 acreage values in Areas 147 and 148 is the subject matter comprising the following pages of this chapter.

Military Bounty Grants

During the War of 1812, in order to induce enlistments, Congress authorized the granting of 160 acres, later 320 acres, of land to soldiers or their heirs. To fulfill the promise of these bounty grants, Congress on May 6, 1812 authorized the President to have sur-

veyed a quantity of lands not exceeding on the whole six million acres; two million acres in the Territory of Michigan, two million acres in Illinois Territory, north of the Illinois River, and two million acres in the Territory of Louisiana.¹ As in the case of the rest of Illinois, the law provided that the lands be divided into townships of 3600 acres and quarter sections of 160 acres each. All these surveyed sections were reserved to satisfy the bounties, with the exception of lands containing salt springs and lead mines, and Section 16 of each township which were appropriated for the use of public schools. After designating the military reserve in which he preferred to locate, the warrant holder drew one of the surveyed quarter sections by lot. A patent was then issued for the selected land without fee. As a protection to the soldiers, the Act provided restrictions against transferring or assigning any rights under the warrant issued for the bounty, until after the patent had been issued. Any sale, mortgage or contract, or agreement of any nature made prior to the issuing of the patent was declared null and void. Furthermore, no such bounty patent could be taken in execution of any sale, mortgage, contract or agreement or account of any debt contracted prior to the date of the patent.

Indian Opposition

The authorization of 1812, by Congress, for these bounty grants provided that the bounties should be located on lands where the Indian title was extinguished, and there was opposition to the settlement of the Illinois bounty lands by the Potawatomi Indians of the Illinois Region. They claimed the land as their home and hunting ground, refusing to recognize the validity of a treaty which William Henry Harrison, while Governor of Indian territory, had concluded in November of 1804 with the Chiefs of the Sauk and Fox tribes. By this treaty the Indian claims to the immense tract of land bounded by the Mississippi River on the west, the Illinois and Fox Rivers on the east, and the Wisconsin River on the north, containing some 14 million acres, was surrendered to the United

¹ Laws of the United States of a local or temporary character and exhibiting the entire legislation of Congress upon which the public land titles in each state and territory have depended

(House Executive Document No. 47, 46th Cong., 3 Sess., 1881), Part 1, pp. 192 - 93; known as Public Land Titles, 1881.

States Government.² In 1815 Congress voted the necessary funds for the survey of the Military Tract and it was begun despite the opposition of the Potawatomi Indians of the Illinois River Region. Accordingly, in the fore part of the year 1816, when the government surveyors went into the Military Tract, previously acquired from the Sauk and Fox in 1804, to run the lines of survey to establish the subsequent location of these county warrants, the Chippewa, Ottawa and Potawatomi Indians in the area began to threaten harm to the surveyors and others, warning them to get out of the Military Tract claiming that the lands actually belonged to them, notwithstanding that they had been previously acquired by the government in 1804 from the Sauk and Fox. Upon being advised of the impending difficulty with the Indians, the President of the United States, in a communication to Congress, requested an appropriation of public funds to enable the extinguishment by the government of the claimed title of the Chippewas, Ottawas and Potawatomes to the Military Tract, in order to avoid threatened bloodshed. As a result of subsequent negotiations, the Military Tract first ceded by the Sauk and Fox in 1804, was again ceded by the Chippewa, Ottawa and Potawatomi Indians to the United States by the Treaty of August 24, 1816.³ By the 1816 Treaty, the Chippewa, Ottawa and Potawatomi Indians also ceded to the United States a strip of land to enable construction of an Illinois River-Lake Michigan Canal, a project which has previously been discussed in Chapter 9.⁴ As a part consideration for the cession to the United States by these Indians of these two tracts in 1816, the Government relinquished to them that portion of Area 148 lying west of the Fox River in Illinois, and additionally the lands of Area 147 lying in Illinois and Wisconsin along the Mississippi River northward of Rock Island, Illinois.⁵ From this 1816 retrocession of Area 147 to the Indians, the United States reserved three leagues square specifically located at the mouth of the Wisconsin River, and, as the fact that there were mineral lands in Area 147 was known to the Government in 1816, additional reservations on or near the Wisconsin River, totaling not to exceed five leagues square to cover such mineral lands, to be selected by the President of the United States where he might think proper.⁶

Enlargement of Illinois Military Tract

As the Act of May 6, 1812 provided that the soldiers be given land "fit for cultivation" in the Ter-

ritories of Michigan, Illinois and Louisiana, President Madison in a report to Congress in 1816 stated that the reserved lands in Michigan were unfit for cultivation, being covered with lakes and swamps.⁷ In view of the estimate of the Adjutant General that 68,500 veterans were entitled to bounty land, which would have amounted to 10,960,000 acres, the President recommended that other military reserves be created. Congress, therefore, by the subsequent Act of April 29, 1816, repealed part of the Act of May 6, 1812, which had provided for surveying two million



FIGURE 10 - 1 The Illinois Military Tract.

acres of military bounty lands in Michigan, and ordered the surveying of additional 1,500,000 acres in Illinois and 500,000 acres in Missouri.⁸ Accordingly, the amount of bounty land in the Military Tract of Illinois, which was estimated to comprise 5,360,000 acres, was increased to 3.5 million acres or about two-thirds of the entire tract. Accordingly, the bounty lands of Illinois contained 207 complete townships of six miles square and 61 fractional townships (See Figure 10-1).

² Department of War, Indian Treaties, and Laws and Regulations relating to Indian affairs — Washington, 1826, pp. 231-32, 492, known as Department of War, Indian Treaties.

³ 7th Stat. 146 — Area No. 77, Illinois 2.

⁴ Area No. 78, Illinois 1.

⁵ Area No. 147, Wisconsin 1, Illinois 2. Area No. 148, Illinois 2 (part west of Fox River).

⁶ Kapplers Indian Treaties, Vol. II, pp. 132 - 133, Art. 2, Treaty of August 24, 1816.

⁷ 2 Stat. 728.

⁸ 3 Stat. 322.

Description of Area

The Illinois Military Tract lies between the Illinois and the Mississippi Rivers. Shaped like an irregular curvilinear triangle, it extends from its point at the junction of the two rivers for 169 miles northward, where it has a width of 90 miles between them. Along the rivers are the bottom lands, while the uplands, lying from 200 to 300 feet above the main water courses, comprise 90% of the area. The southern half of the area is considerably diversified with frequent hills and valleys, and is generally rolling except on the borders of the streams where it is broken and hilly.

In the northern half the land is generally level or gently undulating but broken and hilly on stream borders.

In early descriptions the Military Bounty Tract was described as "abundantly accommodated with wood and water . . .". These early accounts indicate that approximately two-thirds of the entire area was prairie and the remainder timber. The larger prairie areas were in the northern part, but although a large part of this region was prairie land, these prairies were seldom more than a few square miles in extent, being divided by numerous wooded streams. In general, the soil of the region was good and the climate temperate with wide temperature range and abundant rainfall, and a growing season of from 165 days in the north to 185 days in the south. Bounded on two sides by navigable rivers (Illinois and Mississippi) no point on the interior was more than 45 miles distant from water transportation.

Accordingly, the types of land in the Military Bounty Tract were generally similar in characteristics and desirability to those across the Illinois River in the Sangamon area, (Springfield Land Office) discussed in Chapter 8. In these respects they were also comparable to subject Areas 147 and 148 in Illinois. (See Figure 10-2).

Issuance of Military Bounty Warrants

The survey of the Illinois Military Tract lands was not completed until 1822, but bounty warrants were first issued in the latter part of 1817, and between October 1817 and January 1819 approximately 17,000 patents were issued for over 2,800,000 acres of land selected in the Illinois Military Tract.¹⁰ Settlement in the Military Tract followed the same pattern as settlement in southern Illinois. From 1818 to 1830

there was a slow but steady movement of settlers into the Military Tract. The southern part of the Tract was settled first primarily by immigrants from the southern states. The factors determining land selections by settlers also were the same as in southern Illinois. The first settlers who moved into the Military Tract were squatters who held no legal title to



FIGURE 10-2 Forest and Prairie Map of Illinois.

the land on which they settled, except the force of public opinion in regard to "squatters rights". Settlers from the Sangamon area also moved across the Illinois River into the Military Tract.¹¹ However, fear of the Indians, who still roamed the Tract in large

⁹ op. cit. Carlson, 1951 — Illinois Military Tract — Chapter 2.

¹⁰ Lands in Illinois to soldiers of late war (House Document

No. 262, 26th Cong. 1st Sess., 1840.)

¹¹ Ibid. Carlson, p. 26.

numbers during the 1820's, was a retarding factor to settlement of the area.¹² By 1825 a few settlers were moving northward into Fulton, Adams and Hancock Counties of this Tract. The patent, or already patented, lands were widely separated in the Military Tract, and this factor would account for some movements into the central and northern portions of the Tract. However, if the military bounty system was established for the purpose of attaining rapid settlement of unoccupied land and rapid development, it decidedly failed in its purpose. In general the soldiers returned to their homes and carried on their former occupations, disposing of their bounty land warrants for nominal sums. A few wealthy speculators quickly seized the opportunity of picking up large holdings, in some cases as much as 100,000 acres or more. It has been reported that practically every member of Congress speculated in bounty lands in 1819.¹³

As early as 1820, Senator Daniel Pope Cook of Illinois suggested a change in the military bounty land system, to permit soldiers, by the issuance of script, to locate anywhere on government land. He pointed out that the remoteness of the military reserves and the poverty of the soldiers forced them to sell their holdings to speculators, thus delaying rather than encouraging settlement in that part of Illinois. However, Cook's resolution received little consideration. So it came to pass that very few soldiers settled in the military bounty tract of Illinois, and titles to much of the land passed into the hands of speculators.¹⁴

Land Speculations

Many a highly selective quarter section of land was disposed of by its veteran owner for a horse, a cow, a watch, a gun, a saddle, a pair of shoes, or some other consideration of small value.¹⁵ However, a careful study of land transfer deeds in the early period of speculation made by Carlson indicated that \$100, or about 62.5 cents per acre, was the common

price for a quarter section. Carlson also states that his examination of over 1,600 of the original bounty land transfers, as recorded in the various County Records' Offices in Illinois, revealed an average of about \$115 for a quarter section, or about 72 cents per acre.¹⁶

In 1830 only 13,000 settlers were living in the tract, considerably less than the 17,000 soldiers who had originally received patents. Early speculators who acquired the veterans' patents had little profit to show for their efforts. In regard to this Carlson states:

A study of the transfer of some 8,800 quarter-sections (over 1,400,000 acres), in the period from 1827 to 1833, where each transfer indicates a speculative holding involving several quarter-sections in all parts of the tract, reveals an average consideration of less than \$50.00 each, or about 31 cents per acre.^{17 18}

Since most of the soldiers had disposed of their holdings before 1825, it would appear that the soldiers acted wisely in selling their land immediately rather than waiting for an increase in land values. The deed records further indicate that more purchasers of the soldier land patents were forced to take a loss than were able to show a profit on their speculation. Bought with high hopes of profit, land was later offered for sale for everything and anything, and if not disposed of in this way, it usually was sold by the state for non-payment of taxes.

Carlson goes on to further state that:

A study of the speculative activities of forty-two of the more important speculators, during the first fifteen years after 1817, reveals that 8,266 quarter-sections or over 1,300,000 acres were purchased at an average price of \$29.53 a "quarter" or about 18 cents an acre. A total of 5,347 quarter sections (over 850,000 acres) were sold by these same speculators during the same period at an average price of \$45.73 a "quarter" or about 29 cents an acre. This, however, is an incomplete survey and does not include all the tracts bought and sold by these speculators in the entire Military Tract.¹⁹

¹² Ibid. Carlson, p. 26.

¹³ Gates, Paul Wallace — The Disposal of the Public Domain in Illinois 1848 - 56, *Journal of Economic and Business History*, III February 1931, p. 288.

¹⁴ op. cit. Carlson, 1951 — Illinois Military Tract — pp. 8 and 40.

¹⁵ op. cit. Chapman, 1880 — History of Pike County, p. 246. Thompson, Jess M., Feb 26, 1936 — "Pike's County Seat War and Its Effect on the Political Destiny of the State of Illinois" in Pike County Republican.

¹⁶ op. cit. Carlson, 1951 — Illinois Military Tract, p. 41. "... study of all the available land transfers by the soldiers in McDonough County, 1,083 in number, indicates an average of over \$114.00 for each quarter-section. McDonough County Deed Record Copies Nos. 1, 2, 3. A further examination of 559 transfers in Adams, Brown, Calhoun, Fulton, Hancock, Knox, Mercer, Peoria, Pike, Putnam, Warren, Schuyler, and

Henry counties reveals an average price of \$116.00 for the quarter section. Compiled from the original Transcript Conveyances and Record Books of Adams, Hancock, Schuyler, and Warren counties."

¹⁷ Compiled by Carlson from Schuyler County Record Books A, B, C, D, E, F. The average for the seven-year period is as follows: 1827 - \$53.00; 1828 - \$44.00; 1829 - \$39.00; 1830 - \$30.00; 1831 - \$37.00; 1832 - \$48.; 1833 - \$53.

¹⁸ Appraiser's Note: Investigation developed that Carlson used all types of deeds, i.e. warranty, quit claim and barter and sale, on the basis that there appeared little distinction between them at that time. However, for the purposes of this report, a separate and independent study was made by the writer separating the data between warranty deeds and quit claim and barter and sale deeds. These data are included and analyzed in the following pages of this chapter.

¹⁹ op. cit. Carlson, 1951 — Illinois Military Tract, p. 42.

PRIVATE LAND SALES IN THE ILLINOIS MILITARY TRACT

Table 10 - A shows Carlson's summary of some of the important purchase and sale transactions of speculators in the Military Tract from 1818 to 1833.

However, the small speculators who purchased a large number of quarter sections in the 20's had little profit to show for their speculative activities. The very rapid turnover and the sale of bounty lands during the first five years indicate that many thousands, in the hope of quick profits, rushed into western land speculation and sold out as soon as they realized there was to be no sure profit in the near future.²⁰

state. By 1823 the amount of this delinquency had increased enormously. In September of 1823 the State Auditor of Public Accounts of Illinois advertised almost 9,000 quarter sections of land for sale because of non-payment of taxes by non-resident land owners. This was almost half the total amount of land that had been given to the soldiers originally as bounties. Of this, more than 7,000 tracts were sold, and thus, for the second time, a large part of the bounty lands passed into the hands of non-resident speculators. The lands bought at the tax sale could be redeemed by their owners at the purchase price plus a penalty.

Table 10-A
Purchases and Sales in the Illinois Military Tract - 1818 - 1833

Speculator	Purchases			Sales		
	No. of Quarters	Price Per Quarters	Per Acre Purchase Price	No. of Quarters	Price Per Quarter	Per Acre Sale Price
Mases Allen (N.Y.)	603	\$ 37.66	\$ 0.24	..	\$..	\$..
O. Allen (Md.)	52	110.00	0.69	..	..	..
Richard Berrian (N.Y.)	41	41.15	0.26	22	43.16	0.27
Richard Bibb (Ky.)	132	12.96	0.08	..	..	..
Edmund P. Dana (Ohio)	144	112.52	0.70	105	50.48	0.32
Benjamin Dearborn (Mass.)	26	127.00	0.79	198	15.15	0.09
Ninian Edwards (Ill.)	56	9.06	0.06	82	20.62	0.13
Wm. L. D. Ewing (Ill.)	54	6.22	0.04	101	19.00	0.12
William James (N.Y.)	37	61.08	0.38	..	..	..
Joseph Kanick (Md.)	192	56.14	0.35	..	..	..
Walter Mead (N.Y.)	402	40.98	0.26	121	75.00	0.47
Chas. F. Maultran (N.Y.)	82	24.91	0.16	81	46.45	0.29
Stephen B. Munn (N.Y.)	868	28.68	0.18	..	..	..
Russell Nevins (N.Y.)	818	33.61	0.21	426	68.41	0.43
Robert Peebles (Ill.)	103	10.11	0.06	422	18.84	0.12
Ramulus Riggs (Pa.)	31	161.61	1.01	53	110.50	0.69
Jessie Robinson (Me.)	707	25.09	0.16	256	31.56	0.20
Ossian Rass (Ill.)	80	18.23	0.11	109	35.80	0.22
Nathanial Sanburn (Ill.)	164	23.78	0.15	73	37.12	0.23
J. Shackford (Ma.)	96	33.21	0.21	58	23.00	0.14
Jahn Shaw (Ill.)	28	4.00	0.03	41	25.27	0.18
Southworth Shaw (Mass.)	68	20.21	0.13	52	92.31	0.58
Benjamin Shurtliff (Mass.)	63	82.32	0.51	..	..	..
Thaddeus Spencer (N.Y.)	107	101.64	0.64	146	68.50	0.43
James T. B. Stapp (Ill.)	237	14.33	0.09	198	37.97	0.24
Jahn Tillson (Ill.)	1817	24.52	0.15	2340	42.19	0.26
Samuel Wiggins (N.Y.)	137	30.03	0.19	198	38.43	0.24
Robert C. Vase (Mass.)	13	60.00	0.38	60	60.51	0.38
Average			\$ 0.21			\$ 0.26

Compiled by Theodore L. Carlson from the following sources: Schuyler County Record Books, A,B,C,D,E,F, covering land transfers throughout the Military Tract; Adams County Transcript Conveyances, Vol. 1; Hancock County Deed Record, Vol. 1; McDonaugh County Deed Record, Copies Nos. 1, 2, 3; Warren County Deed Record, B.
Ibid. Carlson, p. 58.

Tax Delinquency and Tax Sales

As a result vast areas in the Military Tract were abandoned to tax delinquency and were sold by the

However, only a small part of such lands were actually redeemed.²¹ This large number of parcels, sold for taxes in 1823, compared to only 1,463 sold in 1820. For years many acres continued to be sold for

²⁰ Ibid. Carlson, pp. 41 - 43.

²¹ Redemption period, one year, plus 100% penalty. After

1827 the owner was given two years to redeem with a 50% penalty. In 1833 the penalty was removed and 6% interest substituted.

taxes. In 1825, 6,000 quarter sections or approximately 960,000 acres, were sold; in 1826, 8,000 quarter sections or approximately 1,280,000 acres were sold; and during the next six years from 7,000 to 9,000 tracts, consisting of approximately 1,120,000 to 1,440,000 acres were sold for taxes each year.²² Existing records indicate sale prices of quarter sections at tax sales were at an average of \$3.46 with a range of \$1.74 to \$5.14 and a few at \$10.58.²³

A contemporary letter written in Illinois in 1824 makes the following observations with reference to the lands involved in these tax sales:

There was about 8,000 quarter sections of non-resident lands sold at Vandalia in Dec. last, for taxes (sic.) which if not redeemed within one year will belong to the purchasers. The sums they were sold for would not exceed 5 dollars upon an average and this sum was received in Illinois State Bank paper which is worth only 30 cents to the dollar which will bring the price of the land if not redeemed at less than one cent pr. acre.²⁴

As more than half of these lands that were sold for taxes through the year of 1829 were not redeemed, title to them passed to the speculators and they then found their way back to the market as competitive land offerings.

Much of the Illinois land purchased for speculation at tax sale or otherwise was held by non-residents, many of whom lived in other states. As a result several local agencies were organized to look after their interests, i.e. pay taxes, record deeds, etc. These agencies eventually handled more than half of all of the lands originally given as bounties in the Military Tract.²⁵

In 1829 both contemporary legal and lay opinion believed tax titles to vest good title in the grantee,

and it also appears that many subsequent transfers of title were made on this assumption.²⁶

A letter in 1830 to a Mr. Stuart from a Mr. Duncan in Vandalia, Illinois reveals information as to the contemporary opinion then prevalent as to the validity of tax titles in Illinois. Speaking of those involving the bounty lands in Illinois, Mr. Duncan says:

There is another description of claim upon soldiers' lands called "Tax Titles". Those claims are derived from the state, who have sold them for taxes and costs, upon which two years were allowed to the original owners for redemption, by paying double the purchase money, and upon which no redemption was made. Many of our best lawyers, as well as the attorney-general, place implicit confidence in those claims, and public opinion is so much in favor of them, that the holders of the original patents dispose of them for mere trifles to the holders of the tax title. . . . Indisputable patent titles in the military district could be bought for about fifty cents (that is, half a dollar) an acre at this place, and tax titles at a much less sum. There can never be, from the nature of our surveys, a dispute about the title of lands derived from the government of the State of Illinois.

. . . As the attorney-general does not live in this place, and Judge Hall is an excellent lawyer, I showed your letter to the latter gentleman, who freely afforded the legal advice contained above upon the subject of military and public lands.²⁷

This would seem to indicate that tax titles, upon which there had been no redemption, were generally acceptable in 1829.

1829 Land Sales in Military Tract Reviewed

Accordingly, Carlson, in his studies of speculative sales within the Military Tract, gave equal weight to quit claim, barter and sale, and warranty deeds. However a further analysis has been made in this

²² Ibid. Carlson — pp. 44 - 48.

Illinois Intelligencer, October 4, 1827; October 13, 1827; Oct. 3, 1829. Only 1/3 of the land sold for taxes in McDonough County from 1828 to 1833 were redeemed. Computed by Carlson from McDonough County (Illinois) Tax Sale Record Book.

²³ Volume 459, Book "A", Springfield, (Illinois) — State Auditor's Vaults. Sales in 1827 with deeds issued in 1829.

²⁴ op. cit. Buck, 1912 — Pioneer Letters of Gershom Flagg — p. 38.

²⁵ Asbury, Reminiscences of Quincy, pp. 68 - 69; see General Land Agency Advertisement in the Illinois Intelligencer, September 13, 1823. In October 1825, Robert Blackwell, editor of the Illinois Intelligencer, in conjunction with J. T. B. Stapp, chief clerk in the state auditor's office where the taxes of non-residents were paid, announced the opening of the Blackwell and Stapp Land Agency for redemption of land, payment of taxes, recording of deeds, and other land business for moderate fees. — Illinois Intelligencer, October 7, 1825. One of the most active and prominent of these land agents was John Tillson who moved to Illinois from Massachusetts in 1819. Establishing at first a small land business in Edwardsville, Tillson soon realized the excellent future prospects of a land agent dealing in the unsettled Military Tract

lands. Since the tax on non-resident lands was paid at the state capital, Tillson established an agency at Hillsboro, a short distance from Vandalia. His business grew so rapidly that by 1823 some 1,400,000 acres of land owned by non-residents were in charge of the agency of John Tillson. In fact so much of the state revenue came from this single source that the state auditor merely notified the agency each year that "we have our books now ready, please come and pay the state tax."

op. cit. Carlson, 1951 — Illinois Military Tract — p. 45.

²⁶ Ibid. Carlson, p. 62.

The Act of March 1, 1827, Section 4, Revised Laws of Illinois, 1827, page 326, vested a "perfect title" on the purchaser unless the land were redeemed or the taxes had been paid. Garrett, v. Wiggins, Reports of Cases Argued and Determined in the Supreme Court of the State of Illinois, II, 336; referred to hereafter as Illinois Supreme Court Reports. "The best legal opinion backed by the attorney-general of the state expressed confidence in the validity of the tax title." Stuart, James, 1833 — Three Years in North America, Vol. II, New York, p. 396.

²⁷ Stuart, James, 1833 — Three Years in North America, II — N.Y. — pp. 396 - 397.

PRIVATE LAND SALES IN THE ILLINOIS MILITARY TRACT

study for inclusion in this volume of Mr. Carlson's data, which he was most kind and cooperative in furnishing to the writer. The original county deed record books consulted by Carlson in obtaining data for his report were restudied, but this examination revealed little if any distinguishable difference between the pattern of sale by warranty deed or by different type of deed. Nevertheless, a new tabulation and study was made, dividing all of the sales transactions into two separate groups: those in which the property was transferred to the buyer by warranty deed, and those in which the transfer of title was by other types of deed.²⁸

All deeds between private individuals stating an exact cash consideration, as shown in the record books, dated during the year 1829 and offered for recording up to May 31, 1833, were noted. It is believed that this includes substantially all, if not all, deeds for lands privately sold during the year of 1829 in the Illinois Military Tract. These deed records showed that such 1829 land sales in the Illinois Military Tract, as evidenced by various types of private deeds, consisted of 1,029 quarter sections, or approximately 165,000 acres of land.²⁹

Sales By Quit Claim and Barter-Sale Deeds

According to the county public deed records, 1829 transactions within the Military Tract in which three or more quarter sections (480 acres) were privately sold and title transferred by other than general warranty deed, totaled 823 quarters, or more than 131,000 acres of land.³⁰ In these transactions title was transferred by quit claim or barter and sale deeds in the Illinois Military Tract for a total consideration of \$37,575, or at an average price of 29 cents per acre. (See Table 10 - B) Whether or not such sales, by other than warranty deed, reflected contemporary opinion of land values in Illinois in 1829 could well be the subject of a separate study, but without question this volume of sales and sale prices constituted a factor to be reckoned with in the 1829 Illinois land market. Here individual settlers of small acreages, as well as speculative buyers of large tracts, had equal opportunities to acquire possession of Illinois lands either for homes, speculation or resale which

²⁸ Sales in the Illinois Military Tract made in 1829 and presented for recording 1829 through 1833. Entered in Entry Book I Schuyler County. Deeds recorded in Record Book A, B, C, D, E and F at Rushville, Illinois.

²⁹ General warranty deeds included a provision that the grantor would "warrant and defend forever" the title against the claims of all persons whatsoever.

³⁰ 1829 sales of Government land in the Springfield Land Office across the Illinois River totaled 196,245 acres. (Table 6-G — Chapter 6.)

Table 10 - B
Private Land Sales in the Illinois Military Tract
Transfer of Title by Other than Warranty Deed
Showing the Number of Quarter Sections sold and the Considerations
Transfers Made in 1829 and Recorded between Jan. 1, 1829 and May 31, 1833

Type of Deed	Value	No. of Quarter Sections	Price	
			Per Quarter Section	Per Acre
Quit claim	\$ 20	4	\$ 5.00	\$ 0.03
	7	1	7.00	0.04
	10	1	10.00	0.06
	30	3	10.00	0.06
	10	1	10.00	0.06
	10	1	10.00	0.06
	50	4	12.00	0.08
	50	4	12.00	0.08
	25	2	12.00	0.08
	240	16	15.00	0.09
	27	2	14.00	0.09
	315	21	15.00	0.09
	350	20	17.00	0.11
	180	9	20.00	0.13
	22	1	22.00	0.14
	220	10	22.00	0.14
	180	7-1/2	24.00	0.15
	180	7-1/2	24.00	0.15
	180	7-1/2	24.00	0.15
	2500	100	25.00	0.16
	25	1	25.00	0.16
	25	1	25.00	0.16
	56	2	28.00	0.18
	180	6	30.00	0.19
	500	14	36.00	0.23
	500	14	36.00	0.23
	160	4	40.00	0.25
	2000	46	43.00	0.27
	44	1	44.00	0.28
	50	1	50.00	0.31
	150	3	50.00	0.31
	500	10	50.00	0.31
	1000	20	50.00	0.31
	160	3	53.00	0.33
	80	1	80.00	0.50
	110	1	110.00	0.69
	6000	44	136.00	0.85
	600	2	300.00	1.88
Sub Total	\$ 16746.00	396-1/2		
Average			\$ 42.00	\$ 0.26
Barter and Sale	\$ 144	17	\$ 8.00	\$ 0.05
	200	22	9.00	0.06
	15	1	15.00	0.09
	280	14	20.00	0.13
	85	4	21.00	0.13
	25	1	25.00	0.16
	25	1	25.00	0.16
	125	5	25.00	0.16
	75	3	25.00	0.16
	50	2	25.00	0.16
	100	4	25.00	0.16
	275	11	25.00	0.16
	56	2	28.00	0.18
	30	1	30.00	0.19
	420	14	30.00	0.19
	90	3	30.00	0.19
	90	3	30.00	0.19
	33	1	33.00	0.21
	33	1	33.00	0.21
	300	9	33.00	0.21
	175	4-1/2	39.00	0.24
	40	1	40.00	0.25
	42	1	42.00	0.26
	44	1	44.00	0.28
	212	4-1/2	47.00	0.29
	1760	22	80.00	0.50
	1760	22	80.00	0.50
	836	10	84.00	0.53
	100	1	10.00	0.63
	400	4	100.00	0.63
	2000	19	105.00	0.66
	59	1/2	118.00	0.74
	2400	15	160.00	1.00
	800	5	160.00	1.00
	1600	10	160.00	1.00
	600	3	200.00	1.25
	200	1	200.00	1.25
	250	1	250.00	1.56
	300	1	300.00	1.88
	300	1	300.00	1.88
Sub Total	\$ 16329.00	246-1/2		
Average			\$ 66.00	\$ 0.41
Special Warranty	\$ 4500	180	\$ 25.00	\$ 0.18
Total	\$ 37575.00	823		
Average			\$ 46.00	\$ 0.29

Source: Schuyler County Record Books, A, B, C, D, E, F, covering land transfers throughout the Military Tract; Adams County Transcript Conveyances, Vol. 1; Hancock County Deed Record, Vol. 1; McDonough County Deed Record, Copies Nos. 1, 2, 3; Warren County Deed Record, B.

Walter R. Kuehnle - 1958

APPRAISAL OF ROYCE AREAS 147 AND 148

Table 10-C
Private Land Sales in the Illinois Military Tract
Transfer of Title by General Warranty Deed
Showing the Number of Quarter Sections Sold and the Considerations.
Transfers made in 1829 and Recorded Between January 1, 1829 and May 31, 1833*

Stated Considerations (Value)	Number of Quarters of Section Sold				Price		Remarks
	35 - 100% Timbered	5 - 30% Timbered	Non-timbered	Total	Per Quarter Section	Per Acre	
\$ 75	4	4	7	15	\$ 5.00	\$ 0.03	
10	1/2		1	1-1/2	7.00	0.04	
10			1	1	10.00	0.06	
40	3			3	13.00	0.08	
400	4	9	7	20	20.00	0.13	
500	8	3	10	21	24.00	0.15	
500	8	3	9	20	25.00	0.16	
75	3			3	25.00	0.16	
50		1	1	2	25.00	0.16	
25		1		1	25.00	0.16	
30			1	1	30.00	0.19	
30	1			1	30.00	0.19	
30		1		1	30.00	0.19	
125	3		1	4	31.00	0.20	
35			1	1	35.00	0.22	
350	5	1	4	10	35.00	0.22	Quartile
525	6	2	7	15	35.00	0.22	
115			3	3	38.00	0.24	← inner Quartile Range
40		1		1	40.00	0.25	
40	1			1	40.00	0.25	
205	4		1	5	41.00	0.26	
300	2	2	3	7	43.00	0.27	
450	9	1		10	45.00	0.28	
50		1		1	50.00	0.31	
50			1	1	50.00	0.31	
100	2			2	50.00	0.31	
450	5	4		9	50.00	0.31	
50			1	1	50.00	0.31	
105	2			2	53.00	0.33	
60	1			1	60.00	0.38	
60			1	1	60.00	0.38	
200	2		1	3	67.00	0.42	
70			1	1	70.00	0.44	
70	1			1	70.00	0.44	Median
80		1		1	80.00	0.50	← Median of Sale Prices
560	2		5	7	80.00	0.50	
80		1		1	80.00	0.50	
100		1		1	100.00	0.63	
100	1			1	100.00	0.63	
100	1			1	100.00	0.63	
100	1			1	100.00	0.63	
100	1			1	100.00	0.63	
200	2			2	100.00	0.63	
100	1			1	100.00	0.63	
100	1			1	100.00	0.63	
200		2		2	100.00	0.63	
100		1		1	100.00	0.63	
100		1		1	100.00	0.63	
1000	6	1	1	8	125.00	0.78	
125	1			1	125.00	0.78	
125		1		1	125.00	0.78	
150		1		1	150.00	0.94	
150	1			1	150.00	0.94	
300		2		2	150.00	0.94	← Inner Quartile Range
1600	3	4	3	10	160.00	1.00	
3120	9	9	1	19	164.00	1.03	
350	2			2	175.00	1.09	
875	3-1/2(F)		1	4-1/2(F)	195.00	1.22	
100	1/2			1/2	200.00	1.25	
400	2			2	200.00	1.25	
125			1 (F)	1	200.00	1.25	
200		1		1	200.00	1.25	
200	1			1	200.00	1.25	
400	1	1		2	200.00	1.25	
400	1	1		2	200.00	1.25	
1300	5			5	260.00	1.63	
280	1			1	280.00	1.70	
300			1	1	300.00	1.88	
160		1/2		1/2	320.00	2.00	
500			1	1	500.00	3.13	
Total \$19605.00	121-1/2	62-1/2	76	260**	\$ 75.00	\$ 0.47	Arithmetic Average

* As shown in entry Book No. 1 Schuyler County Record Books A, B, C, D, E, and F in Court House at Rushville, Illinois

** Total acreage for all 1829 Warranty Deed sales listed above estimated at 41,600 acres.

(F) Fractional quarter of section

Source: See Table 10-B

Walter R. Kuehnle - 1958

PRIVATE LAND SALES IN THE ILLINOIS MILITARY TRACT

were competitive with Areas 147 and 148 both before and after 1829.

However, in order that the complete significance of 1829 land sales in the Military Tract might be extracted from the data obtained, a separate analysis was also made of those sales where land was conveyed between private parties by general warranty deed.

within the tract. Conversely, the very low priced sales, by the same hypothesis, may have reflected special unfavorable conditions. Eliminating the sales of the top and bottom quarters of the table for the reasons above indicated, the "inner quartile range" is 24 to 94 cents per acre, which would reasonably appear to be a logical range of fair retail prices for lands within the Military Tract of Illinois for the year

TABLE 10-D
Private Land Sales in the Illinois Military Tract
Transfer of Title by General Warranty Deed
Showing Sales of 4 or More Quarter Sections and the Considerations
(Timbered and Untimbered)
Transfers Made in 1829 and Recorded Between January 1, 1829 and May 31, 1833

	Stated Con- sideration (Value)	Number of Quarters of Section Sold			Price per Acres		Remarks
		with Timber	without Timber	Total	All Quarters	Timber Quarters only*	
	\$ 75	8	7	15	\$ 0.03	\$ 0.06	
	400	13	7	20	0.13	0.19	
	125	3	1	4	0.20	0.26	
	500	11	10	21	0.15	0.28	
	500	11	9	20	0.16	0.28	
	450	10	0	10	0.28	0.28	
	450	9	0	9	0.31	0.31	
	205	4	1	5	0.26	0.32	
	350	6	4	10	0.22	0.36	← Median of sale prices
	525	8	7	15	0.22	0.41	
	300	4	3	7	0.27	0.47	
	1000	7	1	8	0.78	0.89	
	3120	18	1	19	1.03	1.08	
	1600	7	3	10	1.00	1.43	
	875	3-1/2	1	4-1/2	1.22	1.56	
	1300	5	0	5	1.63	1.63	
	560	2	5	7	0.50	1.75	
<hr/>							
Total of 17 Observations	\$ 12335.00	129-1/2	60	189-1/2			
Average					\$ 0.41	\$ 0.60	
<hr/>							
Total of Above Sales of 8 or More Quarter Sections only	\$ 8970	108	49	157			
Average					\$ 0.36	\$ 0.52	

* To assume no value of the non-timbered lands the price per acre is computed by the considerations(value) divided by the acreage of the timber land.

Source: See Table 10-B

Walter R. Kuehnle - 1958

Sales by General Warranty Deed

The public records showed that 260 quarter sections of land, or 41,600 acres, were conveyed by general warranty deed in the Illinois Military Tract in 1829 for a total consideration of \$19,605, or at an average price of 47 cents per acre. (See Table 10-C.) The median average of the sale prices in these transactions was 50 cents per acre. It may be noted from this table that the sale prices range from 3 cents to \$3.13 per acre. The Military Tract had acquired settlers many years prior to 1829, and some of these sales, made at the higher than average prices, most likely included improvements already on the land. Also these sales, disclosed to be relatively so few in proportion to the available lands may have presented especially desirable and selective locations

1829. However, further processing and analysis of these data revealed more than such generalized facts. For example, separately compiled and analyzed sales of the larger acreages disclose the usual situation of lower sale prices per acre than those obtained for the smaller acreages.

The Larger 1829 General Warranty Deed Sales

Of the above 260 quarter sections sold by general warranty deed in 1829, 157 quarter sections, or 25,120 acres, were conveyed in transactions including from 1,280 to 3,360 acres. The sale price of those 157 quarter sections averaged 36 cents per acre. Of the 157 quarter sections so sold, 49 quarters were in sections containing no timber. Even had these quarters in non-timbered sections been considered by the buyer to

APPRAISAL OF ROYCE AREAS 147 AND 148

have been without market value in 1829, the remaining 107 quarter sections having timber still would have cost the purchasers only 52 cents per acre, with the 50 quarters in the non-timbered sections included without added cost. (See Table 10-D). It may be observed, from this same table, that all sales conveying four or more quarter sections showed a higher average sale price at 41 cents per acre, or 61 cents if the non-timbered lands were considered to be without value, again demonstrating the tendency of the sale increases in size.

1829 Smaller Warranty Deed Sales of Timbered Lands

This tendency to a higher price per acre on smaller tracts may again be observed from sales in the Military tract of three quarter sections (280 acres) or less in size. The public deed records disclose sales of this size emphasizing 51 quarter sections, or 8,160 acres all located in sections containing timber, sold in the Military Tract by warranty deeds in 1829. The average sale price was 67 cents per acre. (Table 10-E) Again, the highest sale prices in this group may well have resulted from the value of improvements on the lands. History of the settlement of Illinois contains many references to the practice of settlers to improve a plot, and later to move on to new areas opened for settlement.³¹

1829 Sales of Non-Timbered Lands

Due to a general interest in the lands in the Military Tract, there were several publications in existence in 1829 which gave descriptions of the character of each section and its timber.³² Total sales in 1829 in non-timbered sections in the Military Tract were only twelve quarter sections, or approximately 1,860 acres. All except one of these sales of non-timbered land were for one-quarter section. The average sale price was 46 cents per acre. (See Table 10-F.) These sales of non-timbered lands may have had some redeeming feature of location or they may have been purchased in error. An interesting letter by Gershom Flagg, writing to his brother Aretamus from Edwardsville in Madison County in 1830, includes the following caution:

... It would be like buying a pig in a poke to buy land in the bounty tract without seeing it. The land is generally good but there is a great quantity of prairie and

TABLE 10 - E

Private Land Sales in the Illinois Military Tract
Transfer of Title by General Warranty Deed
Showing Sales of Less than Four Quarter Sections and the Considerations
(All Containing Timber)
Transfers Made in 1829 and Recorded Between January 1, 1829 and May 31, 1833

Stated Consideration	Number of 1/4 Sections (All With Timber)	Indicated Price Per Acre	
\$ 40	3	\$.08	
75	3	.16	
25	1	.17	
30	1	.19	
30	1	.19	
40	1	.25	
40	1	.25	
50	1	.31	
100	2	.31	
105	2	.33	← Inner Quartile
60	1	.38	
70	1	.44	
80	1	.50	
80	1	.50	
100	1	.63	
100	1	.63	
100	1	.63	
100	1	.63	
100	1	.63	
200	2	.63	← Median Average
100	1	.63	
100	1	.63	
200	2	.63	
100	1	.63	
100	1	.63	
125	1	.78	
125	1	.78	
150	1	.94	
150	1	.94	← Inner Quartile
300	2	.94	
350	2	1.09	
100	1/2	1.25	
400	2	1.25	
200	1	1.25	
200	1	1.25	
400	2	1.25	
400	2	1.25	
280	1	1.70	
160	1/2	2.00	
Total \$ 5465	51		
Average		\$.67*	

* Total consideration divided by total acreage sold - sales comprise 8,160 acres.

Source: See Table 10-B.

Walter R. Kuehne - 1958

³¹ op. cit. Pooley, 1908 — Settlement of Illinois, Chapter 1.

³² In 1818 Nicholas Biddle Van Zandt, who was identified with the United States General Land Office in Washington when the Military Tract was surveyed, compiled and published a book and a map based on notes secured from two trips to the area and from data obtained from the original land surveyors' reports and field notes. It contained reasonably accurate descriptions of every quarter section as to character and quality of soil, topography, whether fit or unfit for cultivation. E. Dana

in 1819 also published a more generalized description of land in the tract by townships.

See Van Zandt, Nicholas Biddle, 1818. A Full Description of the Soil, Water, Timber and Prairies of Each Lot or Quarter Section of the Military Lands Between the Mississippi and Illinois Rivers, Washington, D.C.

op. cit. Carlson, 1951 — Illinois Military Tract, p. 40.

Dana, E., 1819 — A Description of the Bounty Lands in the State of Illinois, also the Principal Roads and Routes — Looker, Reynolds & Company, Cincinnati.

PRIVATE LAND SALES IN THE ILLINOIS MILITARY TRACT

some whole townships destitute of timber. . . . If you have a Van Zandt's map of the military bounty lands of Illinois you can see the prairie and timber marked on the map.³³

Apparently buyers in the Military Tract showed the same aversion for lands in non-timbered sections as has been pointed out in Chapter 8, concerning the sales of public lands in Sangamon County across the Illinois River to the east. In any event, regardless of the motivation of the above sales, it is unlikely that the sale of these twelve quarter sections of then undesirable non-timbered lands would have induced a prospective purchaser in 1829 to have acquired vast amounts of such prairie lands in anticipation of reselling them to settlers at 46 cents per acre.

TABLE 10-F

Private Land Sales in the Illinois Military Tract
Transfer of Title by General Warranty Deed
Showing Sales of Less Than 4 Quarter Sections and the Considerations
(None Containing Timber)
Transfers Made in 1829 and Recorded Between January 1, 1829 and May 31, 1833
(From Data in Table 10-C)

Number of 1/4 Sections (non Timber)	Total Consideration	Price per acre
1	\$ 10	\$.06
1	30	.19
1	35	.22
3	115	.24
1	50	.31 ← Median Average
1	50	.31
1	60	.38
1	70	.44
6/10 ⁺	125	1.25
1	300	1.88
<hr/>		
Total 11-6/10	\$ 845	
Average		\$.46

Source: See Table 10-C

Walter R. Kuehnle - 1958

Summary

Over 3,500,000 acres of military bounty lands situated in the Illinois Military Tract were given to veterans. Although in all cases the soldiers drew actual locations by lot and received patents, very few of them settled on the lands, disposing of them for nominal sums. Large holdings were assembled by non-resident owners, and there was a great deal of speculation in bounty lands, much of it, however, not profitable.

Vast tax delinquency ensued in the area, and in the years 1826-1829 over 1,000,000 acres of land were sold for taxes each year, only a fraction of which was redeemed. Tax sales were at an average price of \$3.46 per quarter section, and were considered to give good title if not redeemed within two years. In a recent study of sale prices in the Military Tract prior

to 1829, \$100 was considered to be a common price for a quarter section of land (62.5 cents per acre). An analysis of all private land sales in the tract during 1829 reveals transfers by quit claim, barter and sale and general warranty deed. Separate analysis was made of the sales by warranty deeds and by the other forms of deed. However, it appears that there was little if any price distinction in 1829 between the various forms of deed. The transactions ranged from 80 acres to 63,440 acres. Individual sales by general warranty deed, ranging from 1,280 to 3,360 acres each brought an average price of 36 cents per acre (see Table 10-G). Considering the land in sections without timber included in these sales to be of no value, the price of the remainder, all in timbered sections, would have been 52 cents per acre. Sales of smaller acreage by general warranty deed, ranging up to three quarter sections all in timbered sections, sold at an average price of 67 cents per acre. (Table 10-G.)

TABLE 10-G

Private Land Sales in the Illinois Military Tract Transfer of Title by General Warranty Deed Summarized by Type of Deed and Size of Parcel Transfers Made in 1829 and Recorded Between January 1, 1829 and May 31, 1833				
Type of Deed	Range of Total Acres Sold in Individual Transactions	No. of Quarters Sold in 1829	No. of Acres Sold in 1829	Average Sale Price per Acre As Shown in Various Conveyances
Quit claim - Barter and Sale (Table 10-B)	80 - 63,440	823	131680	29 cents
Warranty Deed				
(a) All Sales (Table 10-C)	80 - 3,360	260	41600	47 cents
(b) Large acreage only* (Table 10-D)	1280 - 3,360 ⁺	157	25120	36 cents
	640 - 3,360 ⁺⁺	189-1/2	30320	41 cents
(c) Small acreage only** (Table 10-E)	80 - 480	51	8160	67 cents
(d) In sections without timber*** (Table 10-F)	100 - 480	11-6/10	1860	46 cents

* 107 were in sections containing timber.

** All were in sections containing timber. The 51 quarter sections were sold in 39 transactions of which 29 were for one quarter section or less

*** Only one transaction was more than one quarter section.

+ The range: 8 quarters of section to 21 quarters of section.

++ The range: 4 quarters of section to 21 quarters of section.

Source: See Table 10-B

Walter R. Kuehnle - 1958

These notable differences in the average per acre sale prices obtained for larger parcels over small parcels becomes greater with the increased size of tracts sold. Accordingly, a prospective purchaser for such a large unit of land as 1,767,274 acres, comprising the timbered lands of Areas 147 and 148, would have been expected to pay much less per acre for land in timbered sections than a potential purchaser for 3,000 acres of such land. As for land in non-timbered sections, the relatively small private sale for this class of lands in the Military Tract again confirms the facts presented in Chapter 8 that the

³³ op. cit. Buck, 1912 — Pioneer Letters of Gershom Flag, p. 42.

APPRAISAL OF ROYCE AREAS 147 AND 148

1,761,675 acres of such land in Areas 147 and 148 would have had little appeal to a prospective 1829 purchaser for investment and resale.

From these facts, either known or ascertainable in 1829, an informed prospective purchaser of Areas 147 and 148 could have logically projected a resale program by a private developer based on the assumption of sale prices of approximately 70 cents per acre for tracts up to one section in all sections containing timber. Also, he could have logically projected some sales of larger tracts of this description up to twenty sections at approximately 50 cents per acre. As to land lying in non-timbered sections, it seems apparent from these sales data, as well as that presented in

other chapters herein, that no informed person in 1829 would have estimated, for the future, sales of any substantial quantity of such lands.

Because of their limited sizes, neither of these groups of sales in the Military Tract are directly indicative of the 1829 value of Areas 147 and 148 which, due to their immense size, should sell for substantially less per acre. However, these data do support a conclusion by an informed prospective purchaser of the subject lands in 1829, that the minimum price of \$1.25 per acre for public lands was generally too high as retail figure, being artificially supported by the Statute of 1820 which established it.

Chapter 11

RESALE POTENTIAL - HISTORICAL RATES OF LAND SALE

In preceding chapters data have been presented as to the amount of available land and the annual sales of such available land in various Midwestern states, as well as in the various land offices in Illinois, and in the Springfield Land Office of that State. From these historical data a prospective purchaser, contemplating the acquisition of the subject property in 1829, could have estimated an annual rate at which a similar tract of land would most probably sell to settlers when ripe for development and for resale in smaller tracts.

In 1829 the Springfield Land Office was the northward extension of government land sales in Illinois and the most popular area for settlement in the State. An analysis of the detailed data of all of the government land sales in this land office between 1823 and 1829 would have clearly shown to such a potential 1829 purchaser that the rate at which Illinois land could be resold to settlers varied widely in accordance with its topography, soil and timber cover. Land with a "just proportion" of deciduous hardwood timber and well-drained prairie soil was most salable, while land without such timber, regardless of fertility or topography, was scarcely salable.¹ However, analysis of these data would also have shown evidence in 1829 of an upward trend in the probable future rate of sale over the previous years' averages.

A prospective purchaser of the subject property, or of any similar tracts, could have made a fair estimate of their value in 1829, based on the estimated number of sections of the salable types of land which it contained, how soon such salable lands could be successfully offered for sale, and the most probable annual rate and price at which it could be resold at retail. In making this determination a contemporary 1829 estimator could have considered prices actually paid and historical rates of sale of such land in other areas. This chapter is devoted to review of data such as a prospective 1829 purchaser might have considered in estimating the most probable rates of sale in Areas 147 and 148 if offered for sale.

Rate of Sale in Springfield Land Office

The famed Sangamon country was the northern

extension of settlement and government land sales in Illinois in 1829. A study of 2,325,120 acres of government lands proclaimed for sale between 1823 and 1829, in the Springfield Land Office area east of the Illinois River, showed sales of 304,480 acres, or approximately 13% of the total offerings. Analysis of the lands sold showed distinct classes of desirability (or lack of desirability):

Class 1 Sections — All land in sections combining substantial areas of good deciduous hardwood timber and fertile, well - drained prairies. These were the most salable lands. Of 433,000 acres offered for sale between 1823 and 1829, 40.6% were sold in the seven year period. The average annual sale rate for each of the four offerings 1823 to 1827 ranged from 3.7% to 10.7% (Table 11 - A).

Table 11 - A
Springfield Land Office
Actual Rate of Sale of Class 1 Sections*
In the Period 1823 to 1829, Inclusive

Area	No. Acres**		Percentage Sold	No. Years During Which Land Was on Market***	Annual Rate of Sale
	Total Offered	Sold			
1	199,040	99,360	49.9%	7	7.1%
2	56,960	22,400	39.3%	6	6.6%
3	103,040	43,920	42.6%	4	10.7%
4	18,560	2,080	11.2%	3	3.7%
5	55,680	8,240	14.8%	1	14.8%
Total	433,280	176,000	40.6%		
Average					8.6%

* A section containing 35 - 100% timber (sail categories 5 and 6) and an appropriate amount of well-drained prairie land (sail categories 1-2-3)

** Converted to acres from number of 80 acre tracts sold as shown on Table 8 - H

*** Actual number of calendar years during which the land was offered for sale see chapter 8, for proclamation dates.

Walter R. Kuehnle - 1958

Class 2 Sections — All land in sections inferior in quantity and/or quality of timber - prairie combination and therefore less salable than that in Class 1 sections. Of 784,000 acres offered for sale between 1823 and 1829, 14.3% were sold in those seven years. The average annual rate of sale for each of the four offerings 1823 to 1827, inclusive, ranged from 0.8% to 3.3% (Table 11 - B). Part of the lower rate of sale in this class section may be ascribed to a smaller num-

¹ Chapter 6, pp. 64-66.

APPRAISAL OF ROYCE AREAS 147 AND 148

ber of desirable 80 - acre tracts in sections with less than 35% timber.

Table 11 - B
Springfield Land Office
Actual Rate of Sale of Class 2 Sections*
In the Period 1823 - 1829 Inclusive

Area	No. Acres**		Percentage Sold	No. years During Which Land Was on Market***	Annual Rate of Sale
	Total Offered	Sold			
1	288,640	61,200	21.2%	7	3.0%
2	129,920	21,200	16.3%	6	2.7%
3	180,480	23,600	13.1%	4	3.3%
4	62,080	1,440	2.3%	3	0.8%
5	123,520	4,960	4.0%	1	4.0%
Total	784,640	112,400	14.3%		
Average					3.0%

* A section containing 5 - 30% good timber (soil categories 5 and 6) and with or without fertile, well drained prairie soil.

** Converted to acres from number of 80 acre tracts sold as shown on table 8-H.

*** Actual number of calendar years during which the land was offered for sale see Chapter 8 for proclamation dates.

Walter R. Kuehnle - 1958

Class 3 Sections — Prairie and bottom lands of all qualities and undesirable timber land, all of which had little contemporary demand. Of 1,107,200 acres offered for sale between 1823 and 1829, only 1.5% of this class of land was sold in this seven - year period. The average annual rate of sale in each of the offerings ranged from 0.1% to 0.6% (Table 11 - C), thus confirming contemporary 1829 opinion of the unsalability of this class of land.

Table 11 - C
Springfield Land Office
Actual Rate of Sale of Class 3 Sections*
In the Period 1823 - 1829 Inclusive

Area	No. Acres**		Percentage Sold	No. Years During Which Land Was on Market***	Annual Rate of Sale
	Total Offered	Sold			
1	263,040	11,360	4.2%	7	0.6%
2	249,600	1,440	0.6%	6	0.1%
3	154,240	2,640	1.7%	4	0.4%
4	291,200	480	--	3	--
5	149,120	320	0.2%	1	0.2%
Total	1,107,200	16,240	1.5%		
Average					0.3%

* A section containing no good timber land (soil categories 5 and 6) only prairie and bottom lands of all qualities.

** Converted to acres from number of 80 acre tracts sold as shown on Table 8 - H.

*** Actual number of calendar years during which the land was offered for sale see Chapter 8, for proclamation dates.

Walter R. Kuehnle - 1958

Of the five proclamation areas constituting the Springfield Land Office east of the Illinois River,

(shown in Tables 11-A, 11-B and 11-C), sales in Area 1, (proclaimed for sale in 1823) which included the Sangamon River area, are probably the most expressive. In this area, 49.9% of the total land in Class One sections was sold during the seven years 1823-1829, as compared with 21.2% and 4.2%, respectively, sold in Class Two and Class Three sections. Summarized the average historical rates of sale, for the five proclaimed areas of the Springfield Land Office (east of the Illinois River) for the period 1823-1829, were as follows:

Class Section	Total Offered		7 Year Average Annual Sales	
	Acres	% of Total	Acres	Annual Rate of Sale
1	433,280	18.6%	176,000	5.8%
2	784,640	33.7	112,400	2.0
3	1,107,200	47.7	16,240	1.0
Total and Average	2,325,120		304,640	1.8%

These rates of sales as they occurred in the five areas, within these three classes of sections, are summarized in the following Table 11-D.

Basis of Estimating Probable Future Rate of Sale

An informed person would have had no reason in 1829 to assume any difference in the degree of buyers' preference for the three classes of land in the subject areas 147, 148A and 148B, from that reflected by the above history of land sales in the Springfield Land Office. However, for several reasons he would have had a basis for anticipating a higher future rate of sale for Class 1 and Class 2 lands than was indicated by the actual 1823-1829 rate of sale for such lands in the Springfield Land Office. Some of these reasons were as follows:

1. The population of the nine new states of Ohio, Indiana, Illinois, Mississippi, Alabama, Louisiana, Kentucky, Tennessee and Missouri had doubled their total population 1810 - 1820 and again 1820 - 1830. Illinois on the frontier had to await its turn but had good future expectancy for increased population growth (Figure 5-5).²
2. The year of 1829 was a year of depression followed by business revival with expectancy of moderately prosperous conditions to follow. (Chapter 4).
3. Continuing progress in transportation during the 1820's, which could be expected to ultimately reach into the existing wilderness of the subject area (Chapter 3).

² Chapter 5.

RESALE POTENTIAL - HISTORICAL RATES OF LAND SALE

Trend of Sales Rate

A potential purchaser considering a probable rate of resale for the subject property, if offered in smaller tracts, would have been aware of the increasing market for land in Illinois as reflected by a gradual increase in the number of acres sold between 1823 and 1829. In the entire State of Illinois, with an estimated gross acreage of 39,000,000 acres, only 1,403,432 acres had been sold by the end of 1827. (Table 6-B.)³ Cash government land sales in the State of Illinois from 1821 to 1827 averaged approximately 53,000 acres per year. In 1828 and 1829 they reached 96,245 acres and 196,245 acres, respectively, indicating an upward trend in land sales although the latter figure was not accurately known in July 1829. The

148B and 147 if offered for sale at retail to settlers. An informed person might reasonably have estimated some upward trend in demand for Illinois land and a market in the foreseeable future for as much as 300,000 acres of land in Illinois (as compared with 198,000 acres of government land sold in Illinois in 1829). Considering the unsold land still on the market, and the large areas of northern Illinois public and Canal Lands still to come on the market, a potential future market for approximately 100,000 acres of land per year in small parcels to settlers might reasonably have been projected within Areas 147 and 148 when ready for settlement.

Of the three Areas 147, 148A and 148B, Area 148A bore the closest resemblance to the Springfield Land

Table 11 - D
Summary Springfield Land Office
Actual Acres Sold and Rates of Sale in First, Second, Third Class Section
In the Period 1823 - 1829, Inclusive

Area	No. years During which Land was on Market	1st Class Land			2nd Class Land			3rd Class Land			Total		
		No. Acres		Annual Rate of Sale	No. Acres		Annual Rate of Sale	No. Acres		Annual Rate of Sale	No. Acres		Annual Rate of Sale
		Total Offered	Sold		Total Offered	Sold		Total Offered	Sold		Total Offered	Sold	
1	7	199,040	99,360	7.1%	288,640	61,200	3.0%	263,040	11,360	0.6%	750,720	171,920	3.3%
2	6	56,960	22,400	6.6	129,920	21,200	2.7	247,600	1,440	0.1	436,480	45,040	1.7
3	4	103,040	43,920	10.7	180,480	23,600	3.3	154,240	2,640	0.4	437,760	70,160	4.0
4	3	18,560	2,080	3.7	62,080	1,440	0.8	291,200	480	-	371,840	4,000	0.4
5	1	55,680	8,240	14.8	123,520	4,960	4.0	149,120	320	0.2	328,320	13,520	4.1
Total		433,280	176,000		784,640	112,400		1,107,200	16,240		2,325,120	304,640	
Average	(a)			8.6%			3.0%			0.3%			2.7%
	(b)			5.8%			2.0%			0.2%			1.8%

Source: Summary from Tables 11-A, 11-B, and 11-C

(a): Average of sale rates for 5 Areas

(b): $\frac{\text{Total land sold in total land offered}}{7 \text{ years}}$

Walter R. Kuehnle - 1958

popular Springfield Land Office, discussed above, is an excellent index of the trend of sale of good lands well located as it accounted for 47% and 44% respectively (45,208 acres and 86,492 acres), of the total acreage of government land in Illinois sold in 1828 and 1829. (Table 6-G)⁴ The 1829 sales of government land in this land office were between 56% and 96% higher than the four year, five year, and the seven year averages which were as follows:

Springfield Land Office Land Sales	Average Yearly Sales ⁵	% Increase 1829 Over Average ⁵
1829 sales	86,492 acres	
7 year (1823 - 1829) average	44,174	96%
5 year (1825 - 1829) average	49,616	74%
4 year (1826 - 1829) average	55,328	56%

Estimated Probable Sale Rate — Subject Areas

The foregoing would have been helpful in 1829 in estimating a probable rate of sale for Areas 148A,

Office in amount of first, second and third class land, and in location. However, conditions as they existed in 1829 indicated a necessary waiting period of at least five years to allow the wilderness of Area 148 to become more accessible, to free the area of Indian troubles, to await market demand, and to permit the disposal of some of the more strategically located Illinois-Michigan Canal Lands by the United States and the State of Illinois.

Due to the transportation connection of Area 147 with the South, by means of steamboats on the Mississippi River during navigable periods, certain favorable locations within this tract could economically have been surveyed and then offered for sale earlier than the lands as a whole (Chapters 3 and 12). For this tract as a whole, however, it could have reasonably been assumed that a waiting and preparation period before beginning sales would have been no more than one year.

³ Chapter 6.

⁴ Chapter 6.

⁵ Table 6 - G, chapter 6.

APPRAISAL OF ROYCE AREAS 147 AND 148

Accordingly, the following would have been a reasonable assumption as to rate of sale for each of the three (desirability) classes of land as established in this report and the overall rate of sale reflecting the relative quantities of each class available in each of the three Areas 147, 148A and 148B. These estimates are compared with the actual 1823-29 rates of sale of government land in the Springfield Land Office.

Class of Section	RATE OF SALE			
	Past Experience	Projected Future Average		
	Springfield Land Office	Subject Area		
	Average Annual Rate of Sale (7 Yrs.) Actual 1823-29 Experience ^a	Assumed Annual (15 Yr.) Rate of Resale 1835-48		
		148A	148B	147
1	5.8%	12%	12%	8%
2	2.0	3	3	2½
3	0.2	1	½	1
Overall	1.8%	3.4%	2.2%	3.2%

Class 1 and Class 2 lands comprise 44.2% of the entire acreage of Area 148A and 25.3% of the entire acreage of Area 148-B. All of this Class 1 and Class 2 acreage would have been sold in approximately fifteen years and fourteen years, respectively, assuming the above rate of sale. Class 3 land in Area 148-A is 55.8% of the total acreage of the entire area. In fifteen years, at the above rate of sale, 47.4% of the entire acreage in the area, all Class 3 land, would have remained unsold. In Area 148-B Class 3 land is 74.7% of the entire area. After 14 years' sales, 69.5% of the entire area, all Class 3 land, will still remain unsold. Assumption of this average rate of sale in these Areas 148A and 148B automatically carries with it another assumption, viz., that when the land in Class 1 sections is exhausted, additional land in Class 2 sections must be sold to also maintain the Class 1 sale rate for the full fifteen years. This is a maximum assumption in view of the probability that the lower rate of sale in Class 2 sections in the Springfield Land Office was probably due to the fact that there were less desirable 80's with timber contained in this class of section.

The same condition applies to Area 147 where lands in Class 2 sections are 64% of the total land in the area and only 17.7% is in Class 1 sections. The amount of Class 2 land is probably overstated for the unglaciated areas in Illinois and Wisconsin because historical comment speaks of "fired" areas, "stunted" timber unfit for building and rough terrain in areas that have been classified in this volume as Class 2 (see Chapter 13). However, no cognizance has been taken of such possibly inferior areas in the

estimated potential sale of lands in the designated Class 1 and Class 2 sections.

Twenty-seven years would be required to sell all of the land in these Class 1 and 2 sections at the estimated potential sale rate. Only 18.3 of the total lands comprising Area 147 have been classified as Class 3. After 27 years' sales at the above estimated rate, only 13.4% of entire Area 147, all Class 3 lands, would still remain unsold.

Summary

Seven years' sales 1823-29 at the Springfield Land Office, the most pertinent offerings of public land sales in Illinois available for study, showed ratio of sales to lands offered as follows:

Land in sections combining substantial areas of deciduous hardwood timber and fertile, well - drained prairie — % sold 40.6%

Land in sections with some deciduous hardwood timber but inferior in amount of timber or fertile, well - drained prairie in combination — % sold 14.3%

Prairie and other land having no deciduous hardwood timber — % sold 1.5%

Accordingly, desirability and value of the subject lands varies widely in accordance with these categories. Prairie lands without timber had little expectancy of resale in the foreseeable future as of the year 1829. In Class 2 sections, one reason for the lower percentage of sale to land offered is probably the fact that they contain fewer desirable 80's (with timber).

An indicated upward trend in land sales in 1829 warranted estimating an increase in the total volume of land sales over the historical 1823-1829 sales rates in the Springfield Land Office, as follows:

Class Section	Historical	Projected Future Sales Rates		
	1823 - 29 Sales Rates Springfield Land Office ^a	148A	148B	147
1	5.8%	12.0%	12.0%	8.0%
2	2.0	3.0	3.0	2.5
3	0.2	1.0	0.5	1.0
Overall	1.8%	3.4%	2.2%	3.2%

History shows that in 1829 the public was cognizant of this relative salability of these three classes of lands. Accordingly, the price that an informed purchaser would then have paid for the subject property would have depended on the amount of land in each of these three classes and would have been influenced by the estimated rates at which lands in each of these classes could most probably have been sold.

^a Data from Table 11 - D.

RESALE POTENTIAL - HISTORICAL RATES OF LAND SALE

Table 11 - E
Acreage by Section Class - Areas 148A, 148B, 147*
Showing Total Available and Projected Total Land Sales

	Area 148A		Area 148B		Area 147	
	Acres	Ave. Annual Sale	Acres	Ave. Annual Sale	Acres	Ave. Annual Sale
No. Acres Available						
Class One Sections	84805	10177	186039	22325	244331	19546
%	17.0		11.3		17.7	
Class Two Sections	135766	4073	231435	6943	884898	22122
%	27.2		14.0		64.0	
Class Three Sections	279202	2792	1,229916	6150	252557	2526
%	55.8		74.7		18.3	
Total	499773	17042	1,647390	35,418	1,381,786	44194
No. Acres Sold	In 15 years		In 14 years		In 27 years	
Class One Sections	84805		186039		244331	
%	17.0		11.3		17.7	
Class Two Sections	128945		223713		880705	
%	25.8		13.6		63.7	
Class Three Sections	41880		86100		68202	
%	8.4		5.2		4.9	
Total	255630		495852		1,193238	
% of Entire Area	51.2		30.1		86.3	
No. Acres Unsold						
Class One Sections	--		--		--	
%	0		0		0	
Class Two Sections	6821		7722		4174	
%	1.4		0.4		0.3	
Class Three Sections	237322		1,143,816		184374	
%	47.4		69.5		13.4	
Total	244143		1,151,538		188548	
% of Entire Area	48.8		69.9		13.7	

* Less 144,000 Acres of U.S. Government reservation for lead lands in Area 147 by the Treaty of August 24, 1816, and 16,640 acres for individual Indian reserves which were 10,240 acres in Area 148A; 5,120 acres in Area 148B, and 1,280 acres in Area 147 by the Treaty of July 29, 1829.

	Area 148A	Area 148B	Area 147
Class One Sections	1920	640	25480
Class Two Sections	3200	640	93600
Class Three Sections	5120	3840	26200
Total Acres	10,240	5,120	145280

Walter R. Kuehnle - 1958

APPRAISAL OF ROYCE AREAS 147 AND 148

Hindsight — Rate of Sale

Table 11-F is a comparison of actual annual average historical rates of sale in the Springfield Land Office for the 1823-1829 period, rates of sale imputed by the writer in this chapter to Areas 147, 148A and 148B, as reflecting the probable views of a prospective 1829 purchaser, and "hindsight" actual rates of sale for the 1823-1836 period in the Springfield Land Office and for the 1835-1848 period for the land offices of Chicago, Dixon and Mineral Point, in which Area 147, 148A and 148B were located.

Hindsight, as revealed in this table, indicates:

- (1) Although a probable increased future rate of sale of government lands was indicated in 1829 by the 1823-29 trend, the actual increase reflecting the boom of 1835-36, which receded in 1837, would not have been fully anticipated by a prospective purchaser in 1829.

- (2) Rates of sale chosen in this report as reflecting the probable views of a prospective buyer in 1829 lie between historical sale rates prior to 1829 and those higher rates of sale actually realized thereafter. For example,

The actual average annual rate of sale in the Springfield Land Office for the period 1823 - 1829 was

1.8% per annum

The actual average annual rate of sale in the Springfield Land Office for the period 1823 - 1835 was

4.5% per annum

Area 148A was most like the Springfield Land Office area. The annual rate of sale chosen for Area 148A as reflecting the probable views of a prospective purchaser in 1829 is

3.4% per annum

Chicago Land Office in which Area 148A is located had an actual annual rate of sale for the period 1835-1848 of

4.8% per annum

The rate of sale chosen as reflecting the 1829 views of a prospective purchaser in Area 148B is

2.2% per annum

Chicago and Dixon Land Offices in which 148B is located had actual annual rates of sale for the period 1835 - 1848 of

4.8% and 2.4% per annum

The annual rate of sale chosen as reflecting the 1829 views of a prospective purchaser in Area 147 is

3.2% per annum

The actual rate of sale in the Mineral Point Land Office in which Area 147 is located for the period 1835-1848 was

4.4% per annum

This hindsight data is included as a matter of interest only; it was not used by the writer in arriving at the probable views of a prospective purchaser, presented in this chapter, as to probable future rates of sale of Areas 147, 148A and 148B as they might have estimated in 1829.

Table 11 - F

Rate of Sale Springfield Land Office 1823-29 and 1823-1836 Chicago Land Office*, Dixon Land Office** and Mineral Point Land Office*** 1835-1848 and Estimated Rate of Sale Compared

Area	Selling Period	Actual Historical Rate of Sale	Est. Rate of Sale
Springfield Land Office	1823-29 (7 yrs.)	1.8	
Springfield Land Office	1823-36 (14 yrs.)	4.5	
Chicago Land Office	1835-48 (14 yrs.)	4.8	
Dixon Land Office	1835-48 (14 yrs.)	2.4	
Mineral Point	1835-48 (14 yrs.)	4.4	
148A	1830-44 (14 yrs.)		3.4
148B	1830-44 (14 yrs.)		2.2
147	1830-44 (14 yrs.)		3.2

*148A is part of Chicago Land Office.

**148B is partly in Chicago and partly in Dixon Land Office.

***147 is partly in Dixon and partly in Mineral Point.

Walter R. Kuehnle - 1958

IV. SPECIAL CONDITIONS AFFECTING LEAD AREA IN AREA 147

Chapter 12

HISTORY OF THE LEAD LANDS WITHIN AREA 147 BEFORE 1816

This deals with an account of facts showing that the lands of Area 147 were acquired by the United States in 1804 by treaty with the Sauk and Fox Indians, and that the Chippewa, Ottawa and Potawatomi Indians subsequently acquired their Indian title to Area 147 in the year 1816 by retrocession from the United States, subject, however, to certain reservations retained therein by the United States. Further investigation has disclosed that while the purpose of the United States' reservation of five leagues square, or 144,000 acres, retained by it under Article 2 of the 1816 treaty, to be located "on or near the Ouisconsin and Mississippi rivers as the President of the United States may think proper to reserve", was left unspecified, yet the presence of lead ores within the area had long been so well known that there can be no doubt but that the intention at the time was to thereby reserve from relinquishment to the Indians the lead deposits within Area 147. This chapter will show the history of this area, with reference to the general knowledge of the presence of lead as well as lead mining prior to the retrocession of 1816.

Early History of the Lead Region

The Upper Mississippi Valley Lead Region was known to contain lead ore long before the Treaty of November 3, 1804,¹ whereby the United States extinguished the Indian title of the Sauk and Fox Indians to certain lands claimed by them in Missouri, Illinois and Wisconsin, which region contained within its exterior boundaries the whole of Area 147.²

The region later to be known as the Upper Mississippi Valley Lead District was first explored in 1624 by M. Jean Nicolet as he travelled up the Mississippi passing through the lead region, but who made no mention of noting the presence of lead.³

In 1658-59, Raddison and Groseiller heard of lead mines while among the Boeuf Sioux in the vicinity of

the present city of Dubuque, Iowa, located across the Mississippi River from Area 147. About 1690 Nicholas Perrot, considered the actual discoverer of lead by the French, established a temporary trading post across from the present site of Dubuque, Iowa. In 1695 LeSueur established a trading post on an island further up the Mississippi River.⁴ This probably marked the introduction of lead mining methods then in existence, and perhaps disclosed the value of lead ore to the Indians. The first mining expedition of importance to the area was by LeSueur in 1699. He found lead mines on both sides of the Mississippi. Later, LeSueur arrived at the mouth of the Fever (Galena) River, within Area 147, with 30 miners in August 1700. One and one-half leagues up this little river, calculated to have been a distance about 4.5 miles, he found "a lead mine in the prairie". Passing up the Mississippi, he passed two streams which correspond to the Platte and Grant Rivers, both located in Grant County, Wisconsin, and there "took notice of a lead mine at which he supplied himself." This mine is supposed to have been what later became known as Snake Diggings (now Potosi), Wisconsin. William DeLisle's 1703 Chart of Louisiana notes "mine de plomb" in this vicinity. (See Figure 12-1.) Other reports tell of miners working in the Fever River area of the present Jo Daviess County, Illinois, as of 1743,⁵ and in 1766 lead was said to have been shipped twice a year from the west side of the Mississippi in 20-ton boats. The same year Jonathan Carver, traveling from Green Bay, Wisconsin, reported lead to have been abundant in the vicinity of Blue Mounds (Wisconsin).⁶ Therefore, it has been historically established during the 18th Century that the French and Indians were mining in the lead area, both within, near and adjacent to Area 147. In 1780 lead ore was discovered by the wife of Peosta, a warrior of Kettle Chief's Fox Village, located in the vicinity of Dubuque, Iowa. Extensive mines there had already been discovered, and in 1788 these Fox

¹ 7 Stat. 84.

² Area 50, Missouri 1, Illinois 1, Wisconsin 2.

³ Thwaites, Reuben Gold, 1895 — Notes on Early Lead Mining in the Fever River (Galena) Region: Wisconsin Historical Collections, vol. XIII, p. 272.

⁴ Bain, H. F., 1916 — Zinc and Lead Deposits of the Upper Mississippi Valley; U.S. Geol. Survey Bulletin 294, p. 2.

⁵ Trewartha, G. T., 1940 — A Second Epoch of Destructive

Occupance in the Driftless Hill Land: American Association of Geographers V. 30 p. 123.

op. cit. Thwaites, 1895 — Notes on Early Lead Mining in the Fever River Region: vol. XIII, pp. 275 - 277.

⁶ Durrie, D. S., 1872 — Jonathan Carver and "Carver's Grants", Wisconsin Historical Collections, vol. VI, p. 225. Blue Mounds was in the part of the lead area outside (east) of Area 147.



FIGURE 12-1 William DeLisle's 1703 Chart Showing "Mine De Plomb" (lead) Near Site of Galena.

Indians in council at Prairie du Chien granted lead lands to Julien Dubuque who settled on them and erected buildings and furnaces. These mines were worked until 1810.⁷ This was the first serious attempt by white men to settle in the lead region of the Upper Mississippi Valley for the purpose of mining. Dubuque's principal mines were located in or within twelve miles of the present Dubuque, Iowa, situated on the west bank of the Mississippi River.⁸ His house and one of his furnaces were located near the mouth of Catfish Creek in Kettle Chief's Fox village. Apparently Dubuque employed principally his Indian friends in his lead mining and prospecting, although he sometimes sent Canadians and half-breeds to check on reported discoveries and to establish new claims. His men brought the lead to his large trading house, and in this manner the entire region of lead mines in the present states of Iowa, Wisconsin, and Illinois became more or less sporadically occupied by Dubuque's men long before any permanent American settlement.⁹

Lt. Zebulon M. Pike visited with J. Dubuque during his 1805 expedition up the Mississippi River. He was not permitted to see the mines, but was given an estimate of 20,000 to 40,000 pounds as the amount of lead ore recovered per year from the Dubuque mines.¹⁰ In 1807 the Congress of the United States reserved the lead lands both in the territory of Missouri and in the Upper Mississippi Valley from public sale and delegated to the President of the United States the control of these mineral lands for leasing purposes.¹¹

In 1810 following Dubuque's death, the Indians destroyed his home and trading post, but continued to mine and trade ore until 1820. About 400,000 pounds of lead ore were reported to have been sent to Prairie du Chien by the Indians in 1810. It is possible that other lead ores were being shipped down the Mississippi at the same time.¹² As early as 1810 there were reports of a "Buck Lead" mine located one mile north of Galena within Area 147, now in Jo Daviess County, Illinois.¹³

In 1807, two years after Lt. Zebulon M. Pike's visit with Dubuque in 1805, an Act was passed by the Congress of the United States providing for the reservation from public sale of the mineral lands of the Upper Mississippi Valley and the Territory of Missouri, and delegated to the President the authority for their leasing for mining purposes.¹⁴

In 1816 the United States relinquished to the Chippewa, Ottawa and Potawatomi Indians portions of Area 50 which it had purchased from the Sauk and Fox Indians in 1804. All of Area 147, both in Illinois and Wisconsin, except certain lands reserved by the United States, and that portion of Area 148 located west of the Fox River in Illinois, were included within this 1816 relinquishment to the Indians.¹⁵ From this 1816 relinquishment to the Chippewa, Ottawa and Potawatomi Indians, the United States under Article 2 of the 1816 treaty reserved (1) A tract of three leagues square located specifically at the mouth of the Ouisconsin River, including both banks, and (2) in addition thereto,

Such other tracts, on or near the Ouisconsin and Mississippi rivers, as the President of the United States might think proper to reserve; Provided, that such other tracts would not in the whole exceed the quantity that would be contained in five leagues square.¹⁶

Nothing was said specifically in the 1816 treaty to the effect that either of the reservations retained by the United States under Article 2 of the treaty was to consist of lead mines. The purpose of the retention by the United States of reservations in total area five leagues square, to be selected at random on or near the Mississippi and Wisconsin Rivers "at such places as the President might think proper to reserve", was left unspecified. However, contemporary accounts and correspondence of the time, as well as the fact that the existence of lead ores within the general area was common knowledge, reveals that the intention of the 1816 treaty was to reserve the lead mines within Area 147 to the United States. In this regard, John McKee, Register of the Land Office at Edwardsville, Illinois, reported to the Commissioner of the General Land Office on December 2, 1816, in part, as follows:

⁷ Schoolcraft, Henry Rowe, 1821 — Narrative Journal of Travels through the Northwestern Regions of the United States: Albany, p. 348.

⁸ Within Area 175, Iowa 1, later to be ceded to the United States in 1832.

⁹ op. cit. Thwaites, 1895 — Notes on Early Lead Mining in the Fever (or Galena) River Region — pp. 282 - 283.

¹⁰ Pike, Zebulon M., Expedition, 1810 — Phil. appendix to part I, p. 5.

¹¹ Sections 5 of the Act of March 3, 1807, 2 Stat. pp. 448 - 449.

¹² Bollvin, Nicholas, Indian agent, letter to William Eustis; from (op. cit.) Thwaites, Reuben Gold, 1895 — Notes on Early Lead Mining in the Fever (or Galena) River Region — p. 285.

¹³ Meeker, Moses, 1872 — Early History of the Lead Region: Wisconsin Historical Collection, vol. VI, p. 281.

¹⁴ Act of March 3, 1807, 2 Stat. pp. 448 - 449, Sec. 5.

¹⁵ Treaty of August 24, 1816, 7 Stat. 146, in which the Ottawa, Chippewa and Potawatomi Indians gave up claims to Area 77 (the Illinois Military Tract) and Area 78 (the Canal Tract); and in which the United States relinquished to them, less certain reservations, the lands of Area 50 lying north of a line due west drawn from the southern extremity of Lake Michigan to the Mississippi River. Area 147 lies within this relinquished area. By the Treaty of November 3, 1804, 7 Stat. 84, Area 50 was ceded by Sauk and Fox Indians to the United States.

¹⁶ Ibid. Treaty August 24, 1816 — Article 2, 7 Stat. 146.

HISTORY OF THE LEAD LANDS WITHIN AREA 147

I know of no other lead mines in the Territory except those which lie above Rock River, and on the Mississippi and Wisconsin Rivers . . . believed by all who have seen them, and from many partial experiments to be inferior to none in the world. . . . They . . . lie . . . as I am informed by Governor Edwards . . . in a tract of country, which the commissioners appointed to treat with the Indians of the Mississippi and its waters, were directed to recede (sic) to the Indians.

. . . They (the treaty commissioners) were instructed to make a stipulation which authorizes the President to reserve . . . any number of tracts, on or near to the Mississippi and Wisconsin Rivers, that should not on the whole amount to more than would be contained in five leagues square. These reservations, it is thought, will be sufficient to save the most valuable of those mines.¹⁷

Accordingly, it appears to be clearly established that when Area 147 was relinquished to the Chippewa, Ottawa and Potawatomi Indians by the United States in 1816, less the specified reservations of five leagues square in random parcels therein totalling 144,000 acres, the presence of lead in the region was well-known, and that said deposits were reserved to the United States under Article 2 of that treaty.¹⁸

Summary

In 1816 a treaty was made by the United States with the Chippewa, Ottawa and Potawatomi Indians whereby it relinquished to them lands lying in the present States of Illinois and Wisconsin (the latter then a part of Michigan Territory), which the United States by treaty in 1804 had previously purchased (Area 50) from the Sauk and Fox Indians. The United States, under the provisions of Article 2 of the Treaty of August 24, 1816, 7 Stat. 146, reserved from its relinquishment to said Indians, in addition to an area three leagues square, specifically designated and located at the mouth of the Wisconsin River, including both banks,

Such other tracts, on or near the Ouisconsing and Mississippi rivers, as the President of the United States may think proper to reserve: Provided, That such

other tracts shall not in the whole exceed the quantity that would be contained in five leagues square.

This latter reserve amounted to a total of 144,000 acres.

The northern portion of Area 147 is located in the center of and is a part of what was known as the Upper Mississippi Valley Lead Region lying in northwestern Illinois, southwestern Wisconsin, and eastern Iowa. The presence of lead in this general area was well known as early as the 17th Century when it was mined by the French and Indians. Active interest in these mineral deposits actually began in the 18th Century. In 1807 the Congress of the United States for the first time reserved said lands from public sale, and delegated to the President control of the mineral lands for leasing purposes both in the Upper Mississippi Valley and in the Territory of Missouri.

Although the presence of lead deposits in this area was well known in 1816, their distribution was erratic and their exact locations were not well known. Therefore, in order to retain the mineral deposits believed to exist in the area, it was necessary for the United States to make the reservations in the Treaty of August 24, 1816 in the above stated form.

In view of the historical facts as to the knowledge of the existence of lead in this area, there would seem to be no room for reasonable doubt that in making this 1816 relinquishment to the Chippewa, Ottawa and Potawatomi Indians, the United States intended to and did reserve therefrom acreages deemed to be sufficient to include the whole of the located and unlocated mineral lands, then either known or believed to have existed, upon the lands of Area 147. That such was the intention of the United States is further supported by additional contemporary correspondence prior to 1829 which appears in Chapter 14 in this volume.

¹⁷ American State Papers, Public Lands, Vol. 3, pp. 271-272.

¹⁸ Under Article 2 of the Treaty of August 24, 1816, 7 Stat. 146, the United States reserved from its relinquishment of a portion of Area 50 to the Chippewa, Ottawas and Potawatomes within the exterior boundaries of Area 147 two reserves as follows:

	Leagues Square	Miles Square	Square Miles	Acres	Where Located
Total acres reserved for selection by President in detached parcels on or near Wisconsin and Mississippi Rivers	5	15	225	144,000	At random within Area 147.
Total acres reserved by fixed location	3	9	81	51,840	At the mouth of the Ouisconsing Rivers, including both banks.

The reservation of three leagues square, being fixed as to boundary, is not included in the total acreage of Area 147 as shown in Chapter 1 of this report.

Chapter 13

GEOLOGY AND MINING

This chapter contains the background of geologic, mining and smelting information concerning the Upper Mississippi River Valley Lead Region, as it was then called, of which the unreserved lands of Area 147 formed a part in 1829. Before July 29, 1829, Henry Rowe Schoolcraft, Lt. M. Thomas and G. W. Featherstonhaugh each had published separate accounts containing geological information acquired during visits to the Upper Mississippi Valley Lead District. In 1831 Schoolcraft again passed through part of the lead region. However, it was not until 1839 that the first geologic study of the entire district was undertaken by David Dale Owen, United States Geologist, who was commissioned by the Secretary of the Treasury under a Resolution of the House of Representatives to explore the region and to submit a report. He began this official undertaking in the fall of 1839, accompanied by 139 assistants. Owen and his party completed the survey of 11,000 square miles in two months and six days. In 1840 Owen submitted a geological report which was republished with illustrations in 1844. A great deal of the factual geologic material presented in this appraisal of the unreserved lands of Area 147 has been taken from the 1840 report of David Dale Owen. A geological study and report similar to his could have been completed by a geologist in 1829 as most of the geologic information presented by Owen in 1840 would also have been available for discovery by a qualified investigator of such facts. A prospective seller or purchaser in 1829 of the involved lands would reasonably have been expected to have made an effort to acquire similar facts before consummating a sale of the unreserved lands of Area 147. Normally they would have left no stone unturned, so to speak, in attempting to obtain all of the available facts having relevance to their market value. The facts, presented by Owens, and many other geologist historians, as to the geological and mining facts about this area, pictures it as it must have existed in 1829.

The Upper Mississippi Valley Lead Region

The northern part of Area 147 is a part of the Up-

per Mississippi Valley Lead Region. Located in the southern end of the so - called Driftless Area of 8,000 to 10,000 square miles, this region covers adjacent portions of Minnesota, Iowa, Wisconsin and Illinois which were not covered by the great ice sheets of the glacial epochs. Here the topography is strikingly different. It has greater relief, sharper contour and better drainage than the glacial plains that surround it.¹ The lead region of the Upper Mississippi River Valley includes about 3,000 square miles in southwestern Wisconsin, northwestern Illinois and a narrow strip west of the Mississippi River in northeastern Iowa. The central part is a rolling plain dissected by major streams to a depth of about 300 feet with relatively hilly marginal areas.² Relief is moderate with rolling hills and wide valleys except along the Mississippi Valley where prominent bluffs are more characteristic of the topography. An escarpment borders the region on the west, southeast and southwest.

The sinuous northern and eastern boundaries of Area 147 which divide that part of the lead region located in Illinois and Wisconsin into two parts is an irregular line between the Wisconsin River on the north, the "Winnebago Village"³ on the Rock River on the south, and is determined by the topographical divide from which the waters drain into the Mississippi River. Accordingly, the lead district of Area 147 is confined largely to that part of the lead region of the Upper Mississippi Valley located east of the Mississippi River and lying in most of Joe Daviess County in Illinois, and also in a great portion of Grant County and in small parts of Lafayette and Iowa Counties in Wisconsin. (See Figures 13 - 1 and 13 - 13.)

Transportation Facilities Within the Lead Region

In 1829 transportation of lead ore in the Upper Mississippi Valley District was by wagon from mine to smelter. The manufactured lead metal was then hauled from the smelter by wagon to some tributary of the Mississippi river, and by the latter stream

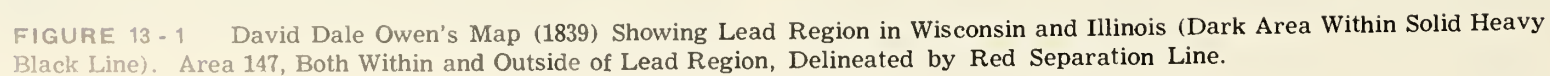
¹ Chamberlin, T. C. & Salisbury, R.D. — Preliminary Papers on the Driftless Area of the Upper Mississippi Valley, U.S. Geological Survey — 1885 — 6th Annual Report — pp. 199-322.

² Heyl, Allen V. et al., 1955 — Zinc, Lead, Copper Re-

sources and General Geology of the Upper Mississippi Valley District — Geological Survey Bulletin 1015 - G, U.S. Department of Interior, p. 228.

³ See frontispiece.

Lith by E. Weber & Co. Baltimore



floated to St. Louis, New Orleans, and ultimately by coastal steamers to the eastern cities.⁴

A prospective purchaser of the lands of Area 147 in 1829 could reasonably have expected the Mississippi River to remain the only relatively good transportation route from the Upper Mississippi Valley Lead District to markets for years to come. Previously attempts had been made to transport lead overland to the east, but they had not been successful economically until after 1855, when a railroad finally connected Galena, within Area 147, with Chicago.⁵ In discussing transportation facilities available to the Upper Mississippi Valley Lead District, Schockel states:

A demand arose early for good roads, a demand difficult to meet, since the country was newly settled and rough. . . . Efforts to reach the outside world overland from the lead region began in 1825, when Kellogg made his trail from Peoria to Galena . . . the first wagonload of lead was hauled to Chicago in 1829. . . .⁶

In discussing the various routes to Green Bay, Milwaukee, and to Chicago, he points out that these could not compete economically with the Mississippi River transportation route to eastern markets.⁷

Advantages and problems of the transportation facilities available to this area as of 1829, and their relation to that of the other portions of Illinois, Wisconsin and the United States, have previously been outlined and discussed in greater detail in Chapter 3 of this Report.

Water and Timber Resources

David Dale Owen in his 1844 report on the Upper Mississippi Valley Lead District stated that,

This lead region is, in general, well watered; namely, by the Peccatonna river, Apple river, Fever river, Platte river, Grand river, the headwaters of Blue River, and Sugar Creek; and on the Iowa side by the Little Maquoketa and the lower portion of Turkey river; all of these streams being tributaries of the Mississippi.⁸

Hodge also reported that the lead region is well wa-

tered.⁹ There was an abundant supply of water for mining and smelting operation. In fact, ground water in the lead district was so plentiful as to be a deterrent to mining when shafts reached the depth of the water table, a problem in early lead mining that has been discussed by many writers. As shallow mining was so adversely affected by the water handicap, prospective miners in 1829 would have taken cognizance also of this unfavorable hazard and difficulty in determining the possibilities of deep mining.

A number of authors have commented on the poor quality of the deciduous hardwood timber in the Upper Mississippi Valley Lead District. Ebenezer Phillips, one of David Dale Owen's sub-agents, reported that in both Wisconsin and Illinois the region was either mostly prairie, or very scrubby burr oak timber, except on the streams which were usually bordered by belts of timber.¹⁰

In 1829 the Galena Illinois Advertiser commented on the scarcity of timber in that area as follows:

The frequent firing of the prairies has rendered the timber, in a great measure, scrubby, very little being found fit for rails or building except in the largest groves and along the Mississippi, the islands on which and for some distance back, with few exceptions, are covered with timber.¹¹

Geology of the Lead Region

The geology of the Upper Mississippi Valley Lead District is fairly simple. Sedimentary rocks are present, and these include clay, limestone, dolomite and sandstone. These rocks dip gently to the southwest but locally the dips may be much greater. David Dale Owen in 1840 recognized that the lower part of the cliff limestone, now called Galena dolomite, was the principal lead bearing rock of the district, as shown in Figure 13-2. He illustrated the arrangement of these rocks by a diagrammatic cross section of the region from north to south as disclosed in Figure 13-3. From this latter illustration it can be seen that the upper most or youngest rocks in the layered succession are Coal Measures and a Pentremital limestone,

⁴ The great bulk of the lead was consumed in the Eastern States, though some was exported from New York. Schockel, B. H., 1916 — Settlement and Development of Jo Daviess County, Illinois, State Geological Survey Bulletin 26 — p. 195.

⁵ "Until 1850 to 1855, the Mississippi River was the only good trade route open to the Galena district. . . ." Ibid. Schockel, p. 215.

⁶ Ibid. Schockel, p. 214.

⁷ Ibid. Schockel, 1916 — pp. 217 - 18.

⁸ Owen, David Dale, 1844 — Report of a Geological Exploration of Part of Iowa, Wisconsin, and Illinois, Senate Doc. 407, 28 Congress, 1st Session. Reprint of 1840 ed. with charts, sections, and other illustrations and slightly revised, p. 36.

⁹ Hodge, J. T., 1842. On the Wisconsin and Missouri Lead

Region, American Journal of Science, vol. 43, p. 36.

¹⁰ op. cit. Owen, David Dale, 1844 — Report of a Geological Exploration of Part of Iowa, Wisconsin, and Illinois — p. 189.

¹¹ Miner's Journal, September 13, 1828, — Fever River Lead Mines — No. II Galena. (Ill.)

The soil maps following Chapter 1 indicate a great preponderance of Class 2 sections in those containing any deciduous hardwood timber. 64% of the sections in Area 147 fall within this class. In view of these historical comments, the Class 2 sections may be actually overstated in this report and their salability overestimated (see Table 11 - E). However, in the absence of more objective proof, these comments have been rejected and the lands presumed to be as described and tabulated from the soil maps.

and these are found outside the lead bearing region. These formations are followed in depth by the Magnesian Cliff Limestone, the Blue fossiliferous Limestone, the Upper Sandstone of the Wisconsin River,



FIGURE 13-2 Cliff Limestone. The Principal Lead-Bearing Rock of the District. Note Tendency of Rock to Break Vertically and Form Cliffs. (From David Dale Owen.)

the Lower Magnesian Limestone, and by alternating sandstone and limestone. A more recent illustration of typical stratigraphic arrangement of the rocks in the lead region is shown in Figure 13-4.

was called "dry bone" by the miners, and pyrite, iron oxide, and calcite. David Dale Owen in 1844 gave the following analyses of two average specimens of galena, and an analysis of lead carbonate from the region:

GALENA

	1st specimen	2nd specimen
Sulphur	16.00	14.63
Lead	84.00	85.37
	100.00%	100.00%

LEAD CARBONATE

	2nd specimen
Carbonic acid	16.00
Lead 72.06) Protoxide	77.62
Oxygen 5.56) of lead	
Oxide of iron	2.00
Insoluble residuum	1.80
Lime	1.00
Water of absorption	1.00
Loss	.58-
	100.00% ¹²

From the above analyses it can be seen that Owen's two galena specimens in 1844 were quite rich in lead, because the purest contains 86.6% lead. Owen further reported that no appreciable amount of silica or of silver sulfide was found in the region, as had been found in lead mines of certain other countries.

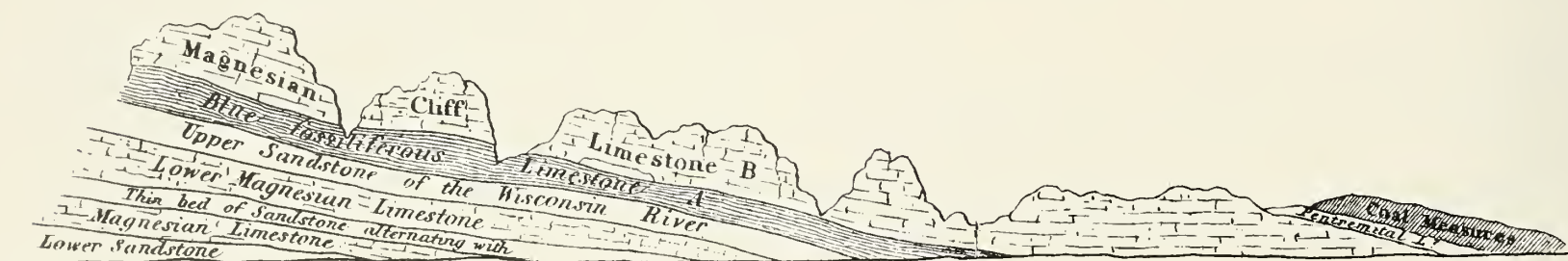


FIGURE 13-3 Cross Section Showing Arrangement of Rocks in Layers. A Diagrammatic Section of the Region from North to South. (From David Dale Owen.)

Ore Mineralogy of the Upper Mississippi Valley

The principal ore mineral of the Upper Mississippi Valley Lead District in 1829 was galena or sulfide of lead, the chief source of lead throughout the world. Galena was found as isolated crystals or clusters, and as granular masses. The crystals were commonly cubes or modified cubes. In a few places cerussite, the lead carbonate, was mined along with galena. Other associated minerals included the zinc sulfide sphalerite, the zinc carbonate calamine which

Nature of Workable Lead Deposits

The only lead ores having commercial value in 1829 were those located in upper crevices and crevice openings of the (cliff) Galena dolomite formation, and those occurring in loose chunks in the soil or clay above the cliff formation, as shown in Figure 13-5. Most of the crevice and fissure ores mined before 1900 were taken from such joint controlled gash vein deposits as disclosed in this illustration.¹³

¹² op. cit. Owen, 1844 — Report of Geological Exploration of Part of Iowa, Wisconsin and Illinois — p. 42.

¹³ op. cit. Heyl, — United States Geological Survey Bulletin, 1015 - G — p. 236.

Usually the fissure ore was found located in fragments ranging in size from a pea up to large masses, sometimes weighing over 1000 pounds. When found in a solid sheet the galena ore was called "sheet mineral" by the miners. The ore was surrounded by or embedded in clay or fine sand, so that it did not usually fill the entire fissure. Calcite accompanied the galena as a gangue or worthless mineral. Frequently part of the fissure contained rock material which had

filled with solid ore is from one to four inches." Rarely was a continuous vein found over one foot in thickness. However, under certain circumstances, it was possible to mine profitably a vein of ore half an inch thick, provided it occurred in solid rock which required blasting. Also, where clay or sand filled the fissure, a vein one quarter of an inch thick could be mined. Occasionally a fissure expanded into a chamber, and if lead mineralization was present, the walls contained layers of galena, earth, and calcite. An exceptional example of such an expanded fissure of the type found and mined in 1829 is to be noted in the recently discovered Hoosier Crevice, located in the southeast $\frac{1}{4}$ of the southeast $\frac{1}{4}$ of Sec. 36, T. 29 N R 1 W, Jo Daviess County, Illinois, within Area 147.¹⁵

SILURIAN	LOWER	Dolomite		190'	Dolomite, buff, cherty
					Dolomite, light-gray, shaly
ORDOVICIAN	UPPER	Maquoketa shale		130'	Shale, blue-green, with thin limestone layers. Phosphatic fossil zone at base
	MIDDLE	Galena dolomite	Dubuque shaly member	33'	Dolomite, yellow, thin-bedded, shaly
			Stewartville massive member	80'	Dolomite, buff, thick-bedded. Receptaculites in lower part
			Prosser cherty member	110'	Dolomite, gray-buff, cherty. Receptaculites near base
		Decorah formation	Ion dolomite member	40'	Dolomite, gray, argillaceous. Limestone, pink, and carbonaceous shale—"oil rock". Shale, light green
			Guttenberg limestone member		
			Specht's Ferry shale member		
	LOWER	Prairie Du Chien group	Quimbys Mill member	60'	Limestone, pink, and carbonaceous shale—"glass rock". Limestone, gray, thin-bedded. Dolomite, gray-buff, thick-bedded. Shale, light-green, sandy
			McGregor limestone member		
			Pecatonica dolomite member		
			Glenwood shale member		
CAMBRIAN	UPPER	Trempealeau formation	St. Peter sandstone	70'	Sandstone, white to brown
			Shakopee dolomite	50-75'	Dolomite, gray, locally cherty
			New Richmond sandstone	0-25'	Sandstone, white lenses
			Oneota dolomite	185'	Dolomite, gray, locally cherty, shaly and sandy
			Jordan sandstone member	30'	Sandstone
			St. Lawrence member	125'	Sandstone and dolomite
			Franconia sandstone	115'	Sandstone

FIGURE 13-4 Generalized Stratigraphic Section of the Upper Mississippi Valley Zinc-Lead District. (From Allen V. Heyl, USGS Bulletin 1015-G.)

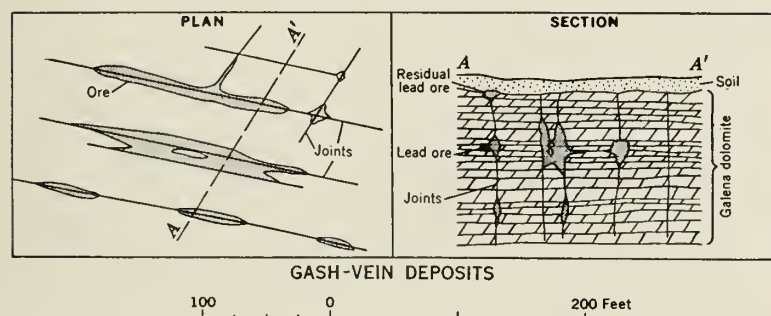


FIGURE 13-5 Diagrammatic Plans and Sections Illustrating Typical Patterns of Gash-Vein Lead Deposits. (From Allen V. Heyl, USGS Bulletin 1015-G.)

fallen in from the walls. The filled fissures varied greatly in thickness and ranged from a fraction of an inch up to 50 feet across. David Dale Owen in 1844¹⁴ stated that, "The most common diameter of fissures



FIGURE 13-6 Arch of Galena (PbS) on Extension of Hoosier Crevice, Herman Smith Property, SE $\frac{1}{4}$, SE $\frac{1}{4}$, Section 36, Township 29 North, Range 1 W, Jo Daviess County, Illinois, 1956 (Within Area 147).

Figure 13-6 shows the arch of galena in the opening below the fissure in the Hoosier Crevice of Jo Daviess County, Illinois. This lead mine, origin-

¹⁴ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois — p. 38.

¹⁵ See map of lead deposits — Figure 13-14 for location of Hoosier Crevice Mine.

ally below the water table, remained undiscovered until recently when it was freed of water by the proximity of a deeper zinc mine. Figure 13-7 discloses the mine entrance and the surface terrain. Most of the productive fissures in Illinois and Wisconsin tended nearly east-west, but some also extended north-south and northeast-southwest. Often the lead ore fissure did not reach the surface, but was capped by rock. Some, however, were exposed at the surface.

lers Ridge," located within Area 147 in the present Lafayette County, Wisconsin, shows such an area that was dug over for "float" mineral. (See Figure 13-8).¹⁷ Both the fissure ore and that found in "clay diggings" were near-surface deposits. Mineralization in the "clay diggings" was of shallow extent. Those found in the fissures generally were developed to a depth of 20 to 50 feet.¹⁸



FIGURE 13-7 Entrance and Countryside Above Hoosier Crevice Mine in Jo Daviess County, Illinois.

A great deal of the early ore production within Area 147 came from the galena which was found in loose soil or clay. Deposits of this type were called "clay diggings," and the ore thus obtained was referred to as "float" mineral. In these the ore is commonly found in detached fragments, but occasionally in regular sheets; and it is covered up, sometimes to a very considerable depth, by ferruginous clay, sand, or detritus (crumbled rock).¹⁶

Sites of such active diggings within Area 147 are still visible as entire areas pitted with holes which still remain. A photograph taken in 1956 at "Swind-

Surface Indications of Ore

A prospector for ore or lead miner in 1829 could ordinarily have told from the surface indications of the lands of Area 147 where to look for lead ore. Such indications were many and rather obvious, which accounts for the fact that most of the important deposits of lead within the exterior boundaries of Area 147 had undoubtedly been found by 1829. J. D. Whitney¹⁹ pointed out that "by the year 1827, mines had been opened and worked over nearly the whole extent of the lead region on the east side of the (Mississippi) river." The lead region to which Whitney made this reference "on the east side of the river" included

¹⁶ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois, pp. 38 - 39.

¹⁷ Located in Section 9, Township 1 North, Range 1 East. It may readily be located on map of lead deposits (Map 13-1.)

¹⁸ Bell, W. H., 1844 — War Department, Report on Mineral

Land of the Upper Mississippi, September 30, 1842, Doc. 43, 29th Congress, 1st Session, House of Representatives, p. 8.

¹⁹ Whitney, J. D., 1858 — Lead, in Report on Geological Survey of the State of Iowa (for 1855 - 56), Vol. 1, Part 1 — pp. 424 - 25.

GEOLOGY AND MINING

Area 147. Subsequent to 1829 additional mines were discovered within these areas, either on new fissures or along extensions of existing ones.²⁰

pearance of the adjacent magnesian limestone." (8) "The presence of a reticulated coral, *Receptaculites*, is a good indication of lead."²¹



FIGURE 13 - 8 Diggings of Swindler's Ridge in Area 147 in LaFayette County, Wisconsin Showing How Entire Areas Were Thoroughly Dug Over for "Float" or Residual Lead. Note Man Standing in Hole in Center of Both Pictures.

Where the region was cut by streams, lead ores were often found on slopes and in valley walls. On upland areas plowing sometimes brought lead or iron minerals to the surface, or disclosed red-brown streaks in the soil, a sign of mineralization. David Dale Owen in 1844 noted several "symptoms of lead ore in Wisconsin: (1) "A bench, step, or slight undulation" in the outline of a hill as disclosed in Figure 13-9. (2) "A small longitudinal depression or miniature ravine, or on a hillside." (3) "Sinkholes ranging either in an east and west or in a north and south course." (4) "A rank growth of vegetation in a linear direction, especially of plants with deep-reaching radicals." (5) "The discovery on the surface of fragment of calcareous spar . . . but if found in large quantities . . . it is an unfavorable sign, as indicating that the fissures are chiefly or entirely filled up with this veinstone, to the exclusion of ore." (6) "The red appearance of the surface indicating the ferruginous clay in which the mineral is often imbedded." (7) "Gravel mineral, (small pieces of lead ore,) in connexion (sic) with the crumbling and arenaceous ap-



FIGURE 13 - 9 A change in Slope or "Bench" Which is Suggestive of the Presence of a Fissure, Possibly Containing Lead. (From David Dale Owen.)

Since David Dale Owen's time a number of additional geologic guides to the location of lead ores have been developed. Some of Owen's guides or symptoms, however, are still used by prospectors and geologists in the district. As A. F. Agnew states,

²⁰ Whitney, J. D., 1862 — *Economical and Mining Geology*, in Report of the Geological Survey of the State of Wisconsin, Vol. 1, pp. 221-420.

²¹ op. cit. Owen, 1844 — *Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois*, p. 40.

"Sinkholes, vegetation markings, traces of joints, and other red streaks in the surface material are all useful criteria."²²

From the above it is clear that as of the year 1829 prospectors or miners of lead ores were able to use fairly reliable surface indications in locating lead ores within Area 147. These guides to lead ores were not always completely trustworthy, but they served as good indications of where such might be expected to occur.

Mining Methods

The mining methods such as employed in the Upper Mississippi Valley Lead District in 1829 have been described by David Dale Owen in his report of 1844, and by H. King, Agent for the United States Lead Mines, in his letter of December 15, 1840 to the Ordnance Department of the Army.²³ Such reported mining methods were about as follows: In promising locations the miner dug a prospect pit in search of ore in depth. If the mineralization in the pit proved to be encouraging, a shaft was then sunk in an effort to find an ore-bearing fissure. Such shaft sinking was a simple process, accomplished by individuals rather than by mining companies. The shafts were commonly 4 to 5 feet in diameter, and irregular to cylindrical in cross section. In loose ground near the surface, it was necessary to line the walls of the shaft with logs. By 1839 some shafts had reached a depth of 150 feet, but very few went deeper than 80 feet. The lead ore was raised from the bottom of the shaft in a bucket, which was hoisted to the surface with a rope attached to a windlass operated by one or two men as disclosed in Figure 13-10. The men also descended and ascended the shaft by means of such a contrivance, ladders being rarely used for that purpose. David Dale Owen realized and carefully noted the practical limitation of mining lead ore beneath the water table, and pointed out clearly that such operations . . .

. . . are usually abandoned as soon as the mine is inundated with water, unless the miner, by drifting (that is, working horizontally) until the external surface of the hill is reached, can readily drain the mine.²⁴

As late as 1858 J. D. Whitney, in recounting the handicaps of lead mining resulting from water flooding, noted that,

The first thing which impresses the mining-engineer, who visits the Upper Mississippi region, having an ac-

quaintance with the important mining districts in other parts of the world, is the fact that the mines here have only been wrought to a very limited depth and then abandoned; so that, throughout the whole lead region, where he will see one excavation where persons are

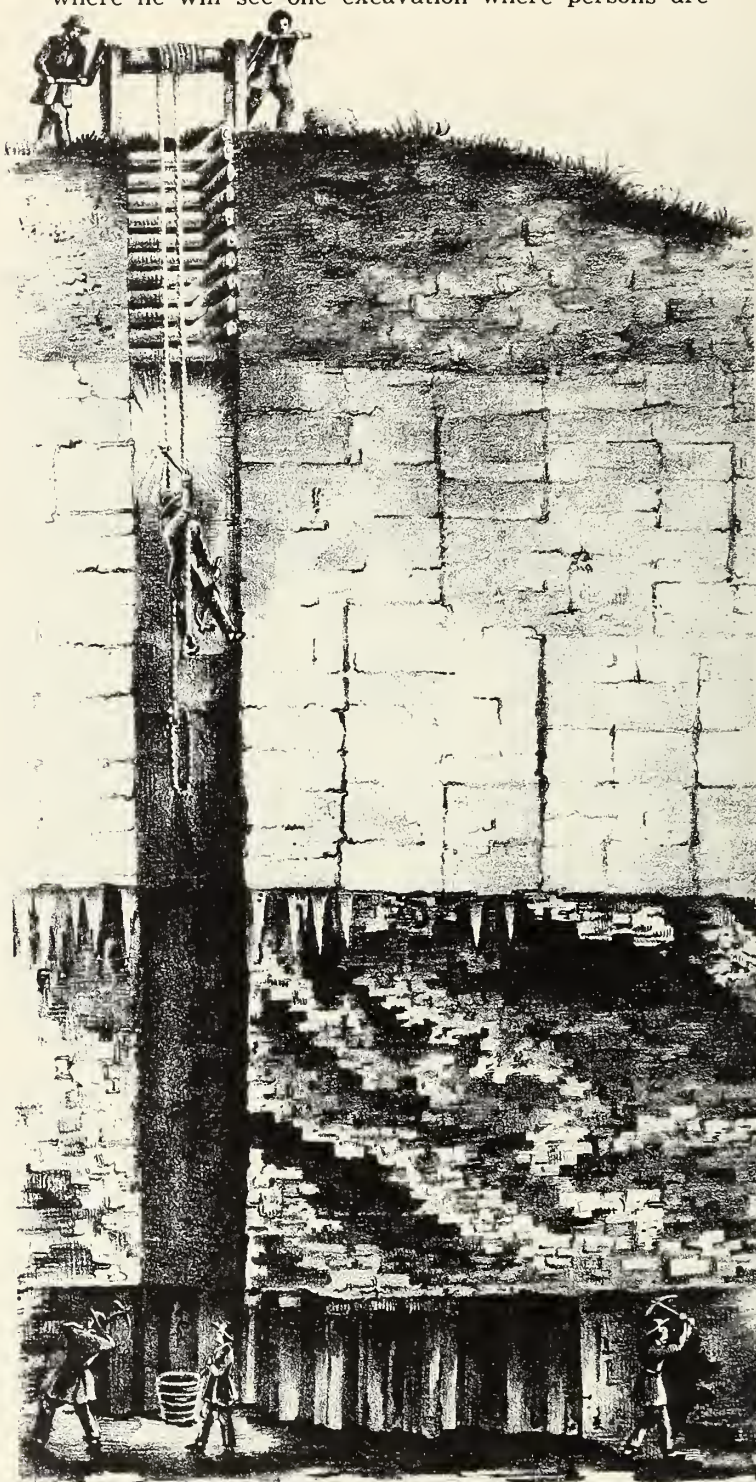


FIGURE 13 - 10 Cross Section of a Mine Shaft and Underground Workings Showing Rope Used for Descent and Ascent, Windlass, and Timbering in Loose Ground. (From David Dale Owen.)

²² Agnew, A. F., 1955 — Application of Geology to the Discovery of Zinc-Lead Ore in the Wisconsin-Illinois-Iowa District — Mining Engineering, August, p. 792.

²³ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois, pp. 40 - 41.
King, H., 1840 — Serial 377, Senate Executive Document 108,

26th Congress, 2nd session, pp. 3 - 15, including letter, H. King, Agent U.S. Lead Mines to Lt. Col. Talcott, Ordnance Dept., U.S. Army.

²⁴ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois — p. 41.

still at work, he will notice a hundred others where nothing is doing, and most of which appear to have been abandoned forever. Again, he will observe, that, instead of an extensive and costly plant (as the machinery and fixtures of a mine are called) and a large body of miners, there will be usually no more than two persons engaged on any one vein or crevice, and that their machinery will be limited to a windlass, and bucket.

To maintain that the deposits of ore in this region are continuous in depth, is to attempt to convict all the miners who have ever worked here of imbecility. . . . There are, undoubtedly, some instances in which valuable bodies of ore have been left going down, on account of water; but it was because the general experience of the region has fully impressed the miners with the belief, that, in the large majority of cases, the outlay required for the costly machinery by which deep mines are kept free from water will not be reimbursed, as the distance to which the crevices can be followed and ore found in them is always limited, and does not generally extend far below the point at which the water becomes too abundant to be kept under control by simple machinery.²⁵

Accordingly, the depth of operations as of 1829, and for a considerable period thereafter was determined by the shallowness of ore occurrences, by ground water level and by the high cost of machinery for deep mining. Mine water was usually removed by bailing, but occasionally the miner was able to work horizontally to the slope of a hill and the water was then drained from the mine. The steam engine was not introduced into the region until years after 1829. In fact, Owen stated that in 1839 only one mine in the district was "drained by a small steam engine."²⁶

At times when lead ore was found on a hill slope, mining was done by tunneling into the side of a hill—a cheaper process than shaft sinking. Where the rock was fairly loose or soft, it was removed with pickaxe, hammer and gad; elsewhere powder was used to blast it loose.²⁷

Another factor, which subsequent to 1829 determined the lower limit of mining, was the appearance of appreciable quantities of zinc ore. Until as late as about 1852, zinc minerals were reported to be a nuisance, and were thrown away by miners as worthless material. Commonly, the lead ores graded into zinc carbonate minerals in depth, followed by zinc blende (sphalerite). It was not until 1852 that zinc ore was

first mined commercially within the lead district.²⁸ The lead ore being mined at this later date was associated with zinc minerals in depth. From the 1860's on, much of the lead produced was mined because it occurred with the zinc ore which was considered to be worthless in 1829. In his 1839 report David Dale Owen stated that the zinc ore

. . . is at present an object of especial aversion to the miner of Iowa and Wisconsin. It frequently happens, in both Territories, that the lead ore in a fissure gradually diminishes, and eventually is entirely replaced by this zinc ore. . . . Thousands of tons are now lying in various locations on the surface, rejected as a worthless drug . . . indeed, as a nuisance. It is known but to a few miners as a zinc ore at all.²⁹

In some of the deeper mines carbonic acid gas sometimes accumulated in such quantities towards the bottom as to render it dangerous to work. This happens chiefly in the hot months of summer, and at such seasons the miners are frequently compelled to discontinue their labors.³⁰

The mines were ventilated by placing a cloth funnel in such a way so as to catch and deflect any breeze down the shaft. David Dale Owen stated that another method is

A common barrel laid on its side, near the mouth of the mine, and provided inside with a rude fan, pivoted horizontally, and attached, by means of a strap, to the windlass employed for raising the ore to the surface. As this turns, the fan inside the barrel also revolves; and as the upper part of the barrel communicates, by means of a canvass tube, with the interior of the mine, the air is drawn up from the bottom of the shaft, and a partial circulation kept up.³¹

The mining methods outlined above had been in use in Europe for generations, and improvements in these methods were slow to materialize.³² In 1840 H. King, United States Agent for the Lead Mines, pointed out that,

In the early time of these mines, the very appropriate title of "digging" was given to the various places in which mining was conducted. There is scarcely enough improvement yet to justify the abandoning of the name.³³

Smelting Operations

In 1829 lead ore in the Upper Mississippi Valley District was smelted in log furnaces and the ash was further treated in ash furnaces. The typical log fur-

²⁵ op. cit. Whitney, 1858 — Lead, in Report on the Geological Survey of the State of Iowa, vol. 1, pt. 1, pp. 434 - 35.

²⁶ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois, — p. 41.

²⁷ Ibid. Owen, p. 41.

²⁸ Bain, H. F., 1904—Zinc and Lead Deposits of Northwestern Illinois, United States Geological Survey Bulletin 246 — pp. 11-12.

²⁹ op. cit. Owen, 1844 — Report of Geological Explorations of Part of Iowa, Wisconsin and Illinois, — p. 51.

³⁰ Ibid. Owen, — p. 41.

³¹ Ibid. Owen, — p. 41.

³² Agricola, G., 1556 — De Re Metallica. Translated by H. G. and L. H. Hoover, 1912.

³³ op. cit. King, Agent for Lead Mines, 1840 — Senate Document 108, 26th Cong. 2nd. session, p. 11.

nace, one of which is shown in Figure 13-11, was crude, though fairly efficient when compared with earlier methods of smelting used in the region. It was usually built on a hillside to take advantage of the steeply sloping ground. Logs were set parallel

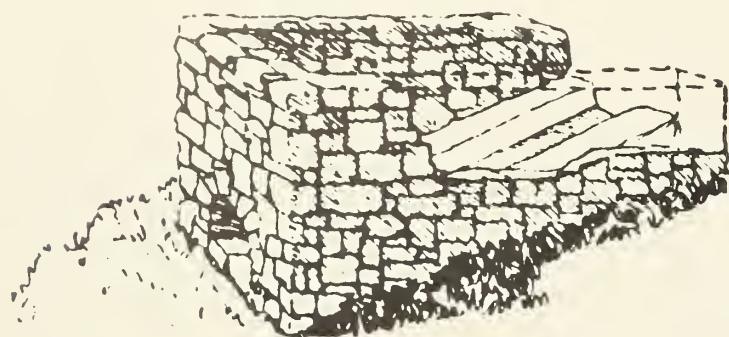


FIGURE 13 - 11 Sketch of Log Furnace Situated on Hillside to Take Advantage of Sloping Ground. (From A. Winslow.)

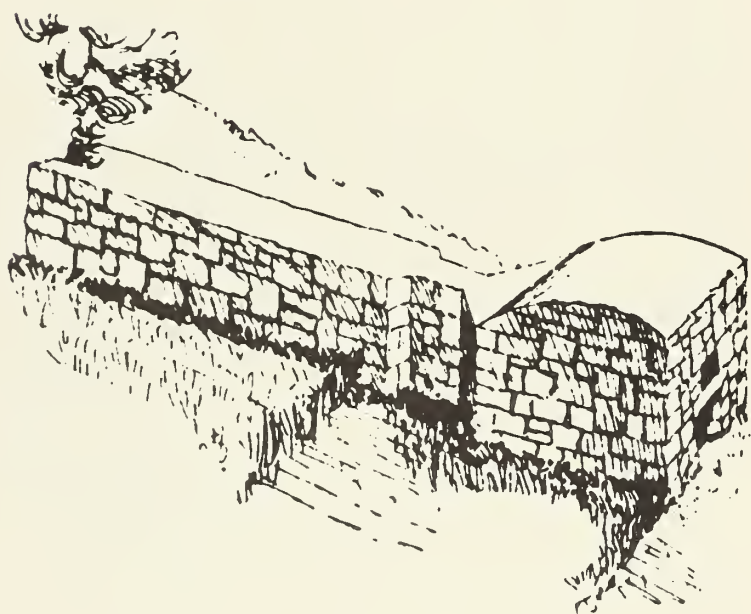


FIGURE 13 - 12 Sketch of Ash Furnace. (From A. Winslow.)

to the hillside and upon these both lead ore and wood were piled. Flat stones were placed on the floor to raise the logs and to permit an uninterrupted flow of lead once the fire had been started. A pit dug beneath the furnace collected the molten lead that ran down the slope. Small lumps of leaden ore partly

melted fell into the ashes or entered the slag. These were crushed, washed and then smelted with a flux in an ash furnace such as shown in Figure 13-12. Henry Rowe Schoolcraft, while on a visit to the Lead District in 1831, described the ash furnace as a "very simple kind of air furnace with a grate so arranged as to throw a reverberatory flame upon the hearth where the prepared ore is laid."³⁴ The slag was removed from the side of the furnace before the molten lead was drawn into iron moulds. Schoolcraft estimated that the yield of the log furnace was 50% lead, and that another 16% was recovered in the ash furnace.

Distribution of Lead Deposits Within the Area

The known lead region in 1829 differed very little from the lead region as it is known today. Figure 13-13, redrawn from the work of A. F. Agnew, shows both

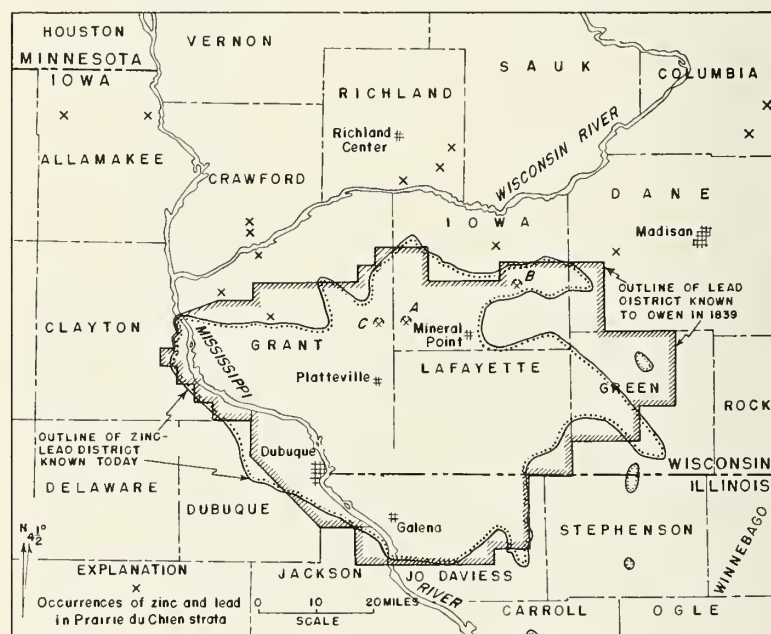


FIGURE 13 - 13 Map of Upper Mississippi Valley Lead District Showing the Region as David Dale Owen Outlined It in 1839 and as It Is Known Today. (From A. Agnew.)

the lead region as David Dale Owen outlined it in 1840, and as it is now known.³⁵ A careful examination of each of the areas separately delineated in this illustration discloses no essential differences between the known lead regions of Area 147 as of 1840 and in 1951.

A re-examination of David Dale Owen's map, shown in Figure 13-1, reveals that most of the lead mines are grouped into districts of patchy distribu-

³⁴ Schoolcraft, Henry Rowe, 1834 — Narrative of an Expedition through the Upper Mississippi to Itasca Lake, etc. Appendix. Remarks on the Lead Mine Country on the Upper Mississippi — pp. 294 - 307.

³⁵ op. cit. Agnew, 1955 — Application of Geology to the Discovery of Zinc - Lead Ore in the Wisconsin - Illinois - Iowa District — pp. 781 - 95.

tion with barren ground between the principal groups. When careful scrutiny is given the appendix to Owen's report of 1844, the extremely erratic character of much of the galena mineralization is then revealed.³⁶ The distribution of lead ores within the region as a whole was not uniform, and the veins of each district were erratic in occurrence. Although the ore fissures generally trended east-west and north-south, it was apparently impossible in most cases to determine before actual mining just how far they would extend in any direction. Many of the productive veins were found to be rich and yielded large quantities of lead ore, but there were also numerous "diggings" which were, according to Owen, "not considered valuable" and "where little ore was raised." Consequently, they were of "minor importance." Many of the "diggings" Owen reported as being "abandoned", or "no longer worked" in 1839, thereby attesting to the shallow and limited extent of the lead deposits in some places, and to the handicapping influence of ground water in curtailing or preventing mining operations altogether. In some locations "small pieces of 'gravel mineral' " or of "float mineral" were found which were of no commercial value, whereas, elsewhere such findings yielded considerable lead production. In discussing the varied character of the veins of ore in the Lead District, J. D. Whitney says they were more like gash veins than true veins, as heretofore depicted in Figure 13-5. Whitney points out that,

The principal distinction between true and gash veins, is, that the former may be worked to an indefinite depth; while the latter, however rich they may be for a certain distance, are sure to give out, or be cut off, on passing into another set of beds of a character unsuited to their development; so that no one vein can be made the seat of permanent mining operations, requiring a large amount of costly machinery, as is the case with true veins, some of which extend for miles in length, and have been worked downwards for centuries, without a permanent diminution of their metaliferous contents.³⁷

A comparison of the Upper Mississippi Valley Lead District with the somewhat similar deposits of the Sierra de Gador in Spain would have substantiated the estimate that the life expectancies of the former were very limited. In discussing the Sierra de Gador Lead District of Spain, J. D. Whitney says that,

These deposits of lead ore present great analogy with those of the Mississippi Valley. . . . In 1823, these

mines yielded 25,000 tons, and in 1827 the production had reached the enormous amount of 42,000 tons, so reducing the price of lead that miners were obligated to enter into a mutual agreement to work the mines only half the year. . . . From the very nature of these deposits, it will be evident that so enormous a production could not be continued for many years; and, in fact, from 1827, when it attained its highest point, there was a rapid falling off, and these deposits are now comparatively exhausted. . . . Previous to 1820, the only mine worked in Spain was that of Almaden, unless we expect a few unimportant iron mines in the Biscayan provinces.³⁸

Thus we see that lead production in a district much like that of the Upper Mississippi Valley and Missouri rose from nothing in 1820 to a maximum of 42,000 tons in 1827, after which there was a rapid drop. David Dale Owen refers to these and other Spanish mines and quotes production figures from 1828 and 1837 that illustrate this decline.³⁹

The mines of the Upper Mississippi Valley Lead District are in large part clustered together in "diggings" with barren or unproductive land between. J. D. Whitney has said that,

The first fact which is apparent in regard to the lead-bearing crevices of the Upper Mississippi region is their arrangement, or concentration, in districts of limited extent; so that numerous sub-districts or mining centres are formed within the area of the Lead Region, each in a measure isolated from the others, and frequently separated from them by wide intervals of almost or quite barren ground. . . . Substantially the same groups of crevices or mining centres were recognized more than 20 years ago, as are now known. On examining Owen's map which accompanies the Report of his survey made in 1839 and on which the quarter-sections containing lead mines are designated, we find every one of the principal districts referred to above represented by the mark for lead on one or more quarter-sections and we are unable to find a single instance of any important mining district which was not known at that time. All the discoveries which have been made since that early period are of new crevices in old districts, and such are of constant occurrence. This agrees with the concurrent testimony of several of the best informed miners, who have assured me that, with a few unimportant exceptions, all the diggings of the Lead Region of the Upper Mississippi Valley were discovered in the course of the 2 or 3 years after the active explorations were commenced, namely about 1828.⁴⁰

This conclusion is further supported by the R. W. Chandler Map of the Lead Region published in 1829,

³⁶ op. cit. Owen, 1844 — Report on Geological Explorations of Part of Iowa, Wisconsin and Illinois, pp. 87 - 91.

³⁷ op. cit. Whitney, 1858 — Lead, in Report on the Geological Survey of the State of Iowa, vol. 1, pt. 1, pp. 432 - 33.

³⁸ Whitney, J. D., 1854 — The Metallic Wealth of the U.S., p. 377. 21st Congress — 1st Sess. Senate Doc. No. 1 — Serial 192.

³⁹ op. cit. Owen, 1844 — Report on Geological Explorations of Part of Iowa, Wisconsin and Illinois, p. 29.

⁴⁰ op. cit. Whitney, 1862 — Economical and Mining Geology, In Report of the Geological Survey of the State of Wisconsin, Vol. 1, pp. 221 - 420.

Figure 13 - 1 shows the quarter sections indicated by Owens as containing lead as shown more clearly for lead area in Area 147 by red markings on Map 13 - 1.

(Figure 13-14).⁴¹ This map shows the principal lead "diggings" and mine locations of the time, although cartographic inaccuracies of proportion and direction have made it impossible to locate with exactness particular townships and sections within the boundaries of Area 147.⁴²

Notwithstanding its disclosed inaccuracies and line distortions, it will be observed by comparison that the lead mines and "diggings" shown on Chandler's Map of 1829 are essentially the same approximate areas as those shown on the David Dale Owen map of ten years later, heretofore disclosed in Figure 13-1.⁴³ As Joseph Schafer has said:

R. W. Chandler's map . . . outlines the lead bearing section as a whole and shows with much definiteness the distribution through it of the special districts to which we now know that profitable diggings have always been restricted.⁴⁴

J. D. Whitney further states that:

This fact, taken in connection with another . . . namely that the rocks are not unfrequently well exposed over considerable areas, where no mining has even been done or important discoveries made . . . seems to indicate that a considerable portion of the Lead Region is quite destitute of valuable deposits of ore.⁴⁵

Location and Extent of Lead Deposits in Area 147

As the United States owned up to 144,000 acres of lead deposits in Area 147, no prospective purchaser would have paid anything for mineral (lead) rights unless he had ascertained that discoverable deposits might exceed this acreage in the foreseeable future.

The above facts, opinions and conclusions of geologist historians as to the character, location and extent of shallow lead deposits are supported and amplified by a restudy of the Upper Mississippi Valley Lead Region by the United States Geological Survey, beginning in 1942 and culminating in the publication of Bulletin 1015-G in 1955. Although this study is hindsight, its findings reveal facts, as to the extent

of shallow lead deposits of the types having value in 1829, as could have been approximately determined by a careful geological survey of the area in 1829.⁴⁶ Commencing in 1942, with the initial advantage of all of the accumulated geological history and research done by other geologists down to that date, the geologists of the Platteville Office of the United States Geological Survey began a detailed restudy of the geology and ore deposits of this district. Numerous individual and mining companies as well as the State Geological Surveys of Wisconsin, Illinois and Iowa also provided additional valuable information. Starting with all this invaluable geological history, maps and geologic reports that had been completed for this region up to 1942, the geologists of the United States Geological Survey began their study and investigation to locate and define the area previously occupied by all old lead diggings and lead mines within this region, which included Area 147. With the assistance of numerous individuals, mining companies and the state geological surveys of Wisconsin, Illinois and Iowa, these geologists sought out all locations of old lead shafts and pits indicating lead mining or "diggings" which might previously have existed in the region. From such information, and by means of existing maps, geologic reports, compilations, and a study of aerial photographs and field platting, the entire lead region was closely examined, and the locations of the early lead mines were painstakingly mapped. The information thereby gained concerning the occurrence of lead deposits within Area 147, past or present, was then compiled, depicted upon a map and made available in open file of the United States Geological Survey in 1951. This map was later published in 1955 as part of United States Geological Survey Bulletin No. 1015-G.⁴⁷ The green markings on Map 13-1 disclose the areas of all known lead mines within Area 147 up to 1950, as shown in this official geological survey bulletin, and have been superimposed on the David Dale Owen map of 1839. This official publication of the United States Geological Survey was also utilized by the United States Bureau of

⁴¹ A review of the Chandler Map appeared in the Galena, Illinois, Advertiser of October 5, 1829.

⁴² NOTE: It appears that this map may have been made from notes prepared with the aid of a "small pocket compass" by Lucius Lyon, then a U.S. Surveyor and later United States Senator from Michigan (1836-1840) and Judge Morgan L. Martin. See Thwaites, Reuben Gold, 1888—Narrative of Morgan L. Martin—Collections of State Historical Society of Wisconsin—Vol. XI—pp. 396-397. For Lucius Lyons final map see MS. WD, Ch E, Bdy 9 National Archives for original (Tube 422).

⁴³ Using such principal locations and geographical features as the Military Road, Rivers, Platte Mounds, Platteville, Shullsburg, and Gratiot's Grove, as rough points of comparison on both the Owen and Chandler maps, the writer has en-

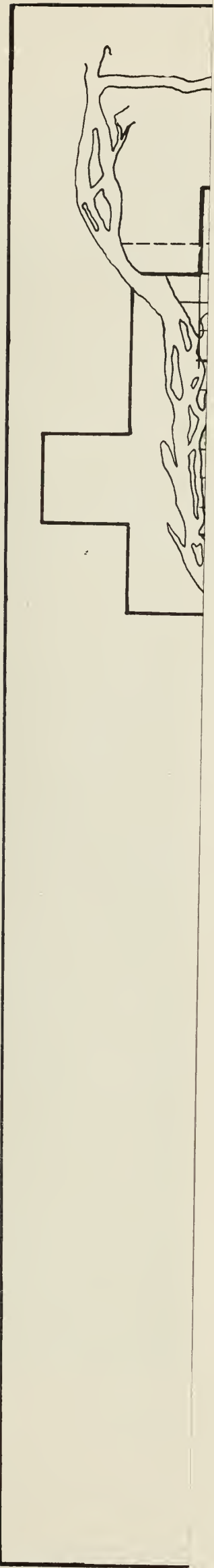
deavored to delineate the approximate boundary of Area 147 on the Chandler Map (Figure 13-14a).

⁴⁴ Schafer, Joseph, 1932—The Wisconsin Lead Region, State Historical Society of Wisconsin, pp. 92-93.

⁴⁵ op. cit. Whitney, 1858—Lead, in Report on the Geological Survey of the State of Iowa, Vol. 1, pt. 1, — p. 433.





⁴⁶ op. cit. Heyl, 1955—Bulletin, United States Geological Survey 1015-G.

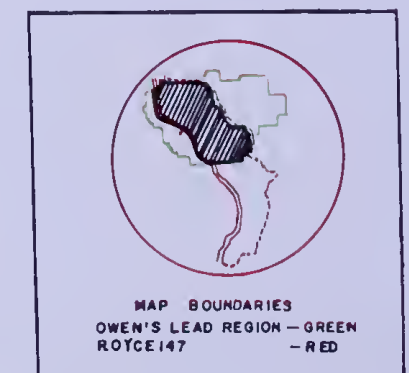
⁴⁷ Ibid. Heyl—United States Geological Survey Bulletin 1015-G, Plate 25 (in pocket). These data were first recorded on a larger scale on a map commonly referred to in United States Geological Survey as the "Big Inch Map" (scale 1" = 1 mile) from which Plate 25, in the pocket of this bulletin, was drawn.



LEAD MINE LOCATIONS **AREA 147** AS INDICATED IN OWEN'S GEOLOGICAL REPORT^(a) AND USGS BULLETIN 1015-G

CODE

-  MINE LOCATION - SHOWN ON GEOLOGICAL CHART^(b)
 SHOWN ON LIST OF PRINCIPAL LOCALITIES
 OF METALLIC ORES^(c)
 FROM DESCRIPTION OF INDIVIDUAL TOWN-
 SHIPS^(d)
-  MINE LOCATION - TWO OF ABOVE INCLUDED IN REPORT
-  MINE LOCATION - ONE OF ABOVE INCLUDED IN REPORT
-  AREA OF PITS AND SHAFTS FOR LEAD ORE AS SHOWN IN
 US GEOLOGICAL SURVEY BULLETIN 1015-G (BIG
 INCH SOURCE MAP)
- (a) *ibid* OWENS DAVID DALE-REPORT OF GEOLOGICAL
 EXPLORATION IN AUTUMN OF 1839
- (b) FROM LOCATION CHART IN ABOVE REPORT
- (c) FROM TABULATION IN ABOVE REPORT
- (d) FROM TEXT IN ABOVE REPORT



MAP 13 - 1



FIGURE 13 - 14 Chandler's 1829 Map of Upper Mississippi Valley Lead Region.

APPRAISAL OF ROYCE AREAS 147 AND 148



FIGURE 13 - 14a Showing the Part of Chandler's Map of Lead Region as Related to Area 147. Boundaries of Area 147 Delineated by Dash Lines.

GEOLOGY AND MINING

Mines, together with other data, in the preparation of a map atlas drawn on the scale of 200 feet to the inch showing the location and area of the early lead dig-

gings and lead mines in the region. Figure 13-15 is a typical example of one of such maps.⁴⁸ This map atlas, containing one section to the page, discloses on

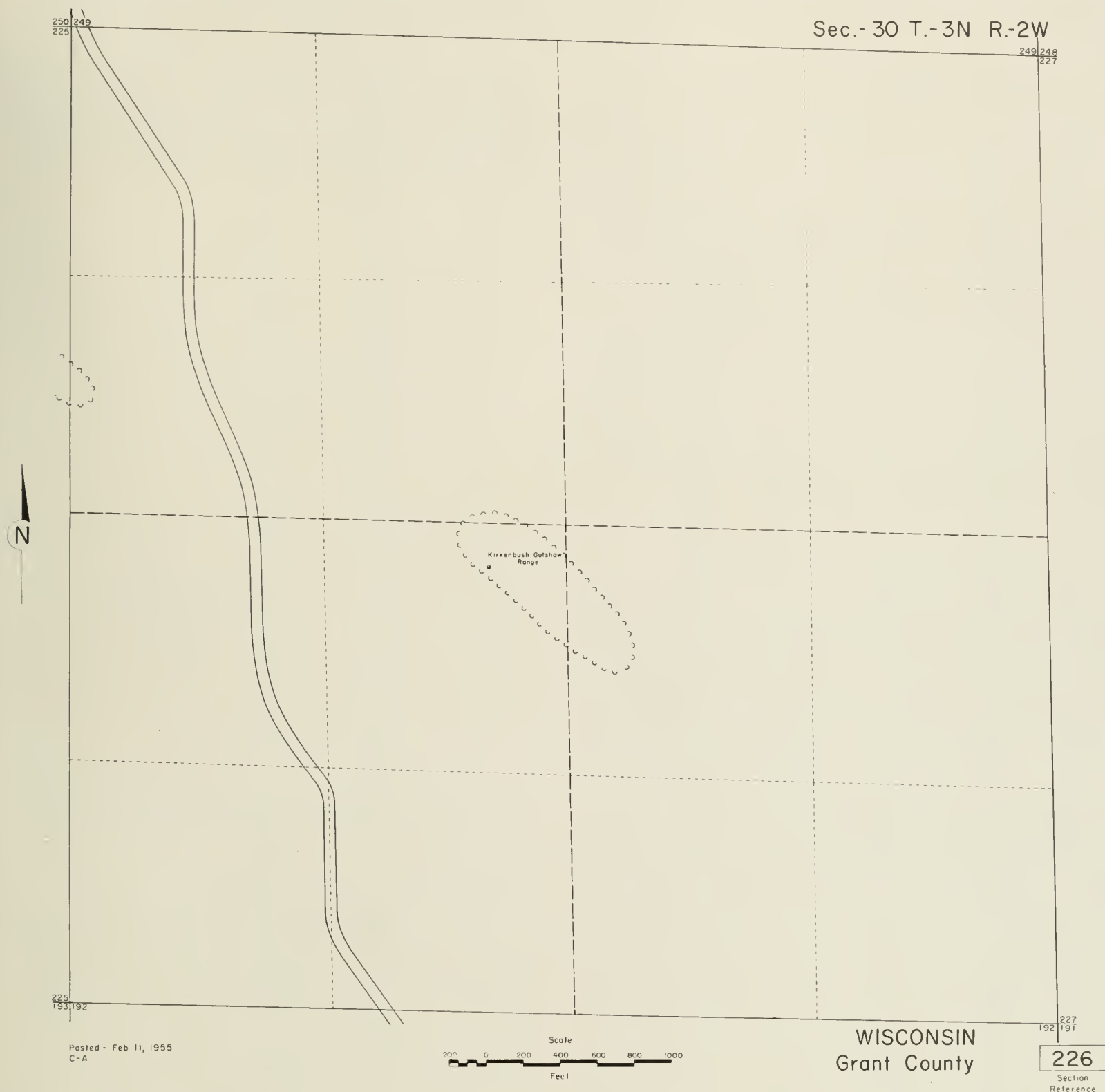


FIGURE 13 - 15 Lead Mines and Diggings Outlined in $\frac{1}{2}$ Circles. (From Atlas — U .S. Bureau of Mines.)

⁴⁸ This figure is an illustration of one of the original pages of an atlas which were drawn on a scale of 200' = 1". The maps have been assembled since September 4, 1947 under direction of the United States Bureau of Mines, Minneapolis Branch,

Mining Division, covering the Lead Region of the Upper Mississippi Valley. The complete atlas set for the area is located in the office of the United States Bureau of Mines at Minneapolis, Minnesota.

a large scale the locations of the old lead mines or lead "diggings" in the lead region of Area 147, as shown on Plate 25 in the United States Geological Survey Bulletin No. 1015-G. In the opinion of geologists familiar with the area, including those of the United States Bureau of Mines, and in conformance with similar conclusions reached by other students of the same subject matter with whom the writer has counselled at length, the care and thoroughness with which the research has been conducted and the maps completed, have resulted in the location presently of perhaps better than 95% of all old lead "diggings" within Area 147. Such investigation and research has further disclosed the maximum probable area of lead ore deposits within Area 147 of the type which could be considered as having had market value as of July 29, 1829. However, as heretofore pointed out this information, standing alone, constitutes hindsight knowledge, and consequently was not available to a prospective purchaser of the lands of Area 147 on July 29, 1829. The opinion of value of the unreserved lands of Area 147, as given in this report, is established only on the basis of facts that could have been known as of the cession date of 1829.

Area of Recorded Lead Deposits in Area 147

The actual acreage of early lead "diggings" has been ascertained by the writer through computing the indicated area of old lead shafts and pits located on each 40-acre tract located within the lead bearing region of Area 147, as shown on the maps of the United States Geological Survey and the United States Bureau of Mines, to which reference has just been made. This information was then recorded for each section of Area 147 containing any of such early lead "diggings," showing the total acreage of the lead "diggings" within each particular section of Area 147, and the number of 40-acre tracts within each section containing lead.⁴⁹ Table 13-A shows that there were approximately 890,000 acres of the lead region, as defined by David Dale Owen, in 1839, lying within Area 147. Of this total area of 890,000 acres of lead lands within Area 147, only 18,325 acres, or less than 2%, constituted the actual area of the early lead shafts and pits. In competent opinion, this latter figure represents a reasonable estimate of the acreage of all early lead deposits within Area 147, mined either before or after 1829. (See Figure 13-16.) It is to be observed also from an examination of Table 13-A that while there are approximately 24,300 regular 40-acre tracts in the entire lead region of Area 147, all of

the indicated lead deposits are located upon just 2,610 of these 40-acre tracts. It can further be seen from an examination of Tables 13-A and 13-B and from a comparison with the old lead deposits depicted in Map 13-1 that in some townships and sections of Area 147 the lead deposits were indeed very sparse. The preponderance of such lead deposits is shown to be grouped into several relatively small but rich areas, whereas the remainder consists of both large and small barren areas separating widely scattered marginal mineral deposits.

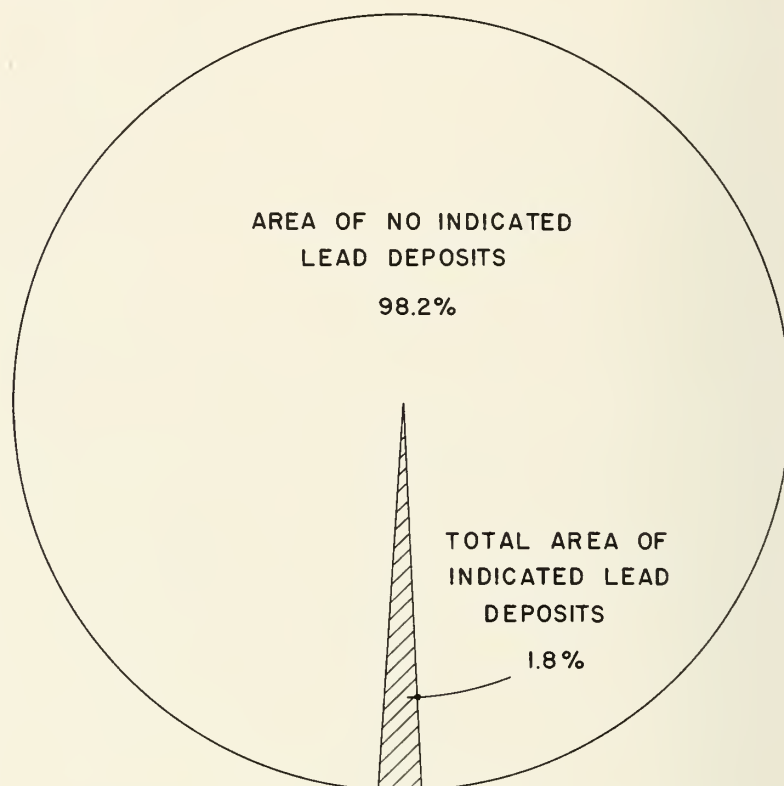


FIGURE 13 - 16 Diagram of the Area of Indicated Lead Deposits and That of No Indicated Lead Deposits in David Dale Owen's Report of the Lead Region Within Area 147.

Lead Deposits by Sections Within Area 147

These recorded data of the indicated area of lead deposits in each section of Area 147 were arranged to disclose the varying densities of the lead deposits located on each section of land in which the old "diggings" have been located. The tabulations show 1,527 sections within the exterior boundaries of David Dale Owen's Report of the lead area as compiled by him in 1839 lying within Area 147. Of these, only 510 sections of Area 147 contained the indicated 18,325 acres of lead deposits. These sections are totaled by townships in the sixth column of Table 13 - A.

⁴⁹ Under direction of the writer, the recorded data for each of such lead-bearing sections were key-punched on an International Business Machine record card for automatic tabulation.

The results of this tabulation, by townships, is shown in Table 13 - A.

GEOLOGY AND MINING

Table 13-A

Distribution of Lead Bearing Lands in the Lead Region in the Upper Mississippi Valley Lying Within Area 147, by Townships, Sections and 40 Acre Tracts, as Indicated by Areas of Early Lead Shafts and Pits (Lead Diggings) Shown by U.S. Geological Survey Bulletin 1015G and Atlas of U.S. Bureau of Mines

Range	Township (North)	Total Acreage of Lead Diggings	Townships Containing Lead		Sections Containing Lead			40 Acre Tracts Containing Lead		
			Total Area in Acres	% Lead Diggings are of Twp. Area	Number Within Twp.	Total Area in Acres	% Lead Diggings are of Sec. Area	Number Within Twp.	Total Area in Acres (3)	% Lead Diggings are of Area of 40's
1 E	1	3014	23136	13.0%	35	22496	13.4%	375	15000	20.1%
	2	574	23087	2.5	32	20518	2.8	145	5800	10.1
	3	232	16495	1.4	8	5084	4.6	42	1680	13.8
	4	93	8279	1.1	8	3644	2.6	21	840	11.1
	5	47	1735	2.7	3	1453	3.2	11	440	10.7
	6	101	372	27.2	2	372	27.1	12	480	21.0
	27	237	16461	1.4	10	6335	3.7	35	1400	16.9
	28	721	16843	4.3	18	9591	7.5	97	3880	18.6
	29	1041	8876	11.7	18	8642	12.0	108	4320	24.1
1 W	1	752	23098	3.3	25	16032	4.7	110	4400	17.1
	2	419	23074	1.8	17	10891	3.8	81	3240	12.9
	3	1077	22931	4.7	34	21657	5.0	209	8360	12.9
	4	33	23016	.1	8	5068	.7	10	400	8.3
	5	163	22382	.7	16	9686	1.7	51	2040	8.0
	6	177	7733	2.3	5	2257	7.8	31	1240	14.3
	28	790	17538	4.5	13	8166	9.7	70	2800	28.2
	29	273	12319	2.2	12	6155	4.4	53	2120	12.9
	29	273	12319	2.2	12	6155	4.4	53	2120	12.9
2 E	1	1331	22637	5.9	27	16877	7.9	195	7800	17.1
	2	189	9836	1.9	9	5139	3.7	41	1640	9.2
	27	680	23258	2.9	13	8336	8.2	82	3280	21.0
	28	47	23211	.2	6	3930	1.2	17	680	6.9
	29	179	12549	1.4	7	4039	4.4	25	1000	17.9
2 W	1	1228	19047	6.4	13	8292	14.8	81	3240	37.4
	2	300	23277	1.3	6	3840	7.8	31	1240	24.2
	3	329	23188	1.4	21	13487	3.4	78	3120	10.5
	4	50	23032	.2	5	3192	1.6	15	600	8.3
	5	14	23061	.1	2	1280	1.1	4	160	31.3
	6	14	8791	.2	3	789	1.8	8	320	15.6
	29	92	9553	1.0	12	5341	1.7	29	1160	7.9
3 E	1	54	9029	.6	6	3127	1.7	13	520	10.4
	27	74	23113	.3	5	3234	2.3	14	560	13.2
	28	19	23264	.1	4	2604	.7	7	280	6.8
	29	111	12857	.9	3	1920	5.8	15	600	18.5
3 W	2	102	7496	1.4	4	2481	4.1	15	600	17.0
	3	1194	23172	5.2	14	9012	12.3	119	4760	25.1
	4	230	23205	1.0	14	9026	2.5	44	1760	10.5
	5	2	23009	.0	1	640	.3	1	40	5.0
4 E	27	98	21619	.5	4	2551	3.8	19	760	12.9
	28	6	22353	.0	1	637	.9	1	40	15.0
	29	421	12623	3.3	11	6940	6.1	49	1960	8.5
4 W	3	20	22938	.1	5	3105	.6	9	360	5.6
	4	1033	22967	4.5	20	12669	8.2	130	5200	19.9
	5	16	22871	.1	2	1280	1.3	5	200	8.0
5 E	27	6	5914	.1	1	618	1.0	1	40	15.0
5 W	3	100	17808	.6	7	3870	2.6	23	920	10.9
	4	546	23176	2.4	12	7708	7.1	58	2320	23.5
6 W	3	4	3534	.1	1	460	.9	1	40	10.0
	4	92	10988	.8	7	4056	2.3	19	760	12.1
Total		18325	820751 (1)	2.2% (2)	510	308527	5.9%	2610	104400(3)	17.6%

Note: (1) Approximate total Area of Owen's Report of the Lead Region of the Upper Mississippi Valley lying within Area 147 is estimated at 1527 Sections, containing 890108 Acres. (Total Area Iowa, Grant and LaFayette Counties, Wisconsin and Jo Daviess County, Illinois, less area of Township 26, North, Range 1 to 5 East, inclusive)

(2) 2.0% 890,108 Acres in Owen's Report of the Lead Region lying within Area 147.

(3) Number of Tracts within Township times 40 Acres.

Walter R. Kuehnle — 1958

APPRAISAL OF ROYCE AREAS 147 AND 148

Table 13-B

Distribution of Lead Bearing Lands in Lead Region Within Area 147 as Indicated by Old Lead Shafts and Pits as Shown by Bulletin 1015G. U.S. Geological Survey and by the Atlas of the United States Bureau of Mines.

Lead Bearing Sections of Area 147 Grouped by Various Densities of Indicated Deposits

1 Class Sections with indicated total acres of lead deposits of			2 Total Acreage of Lead Diggings	3 Number Within Class	4 Sections Containing Lead Total Area in Acres	5 % Lead Diggings are of Total Acreage	6 % of 510 Sections Containing Lead Deposits For this Class	7 Cumulative Total	8 % of Total Lead Deposits Contained in 510 Sections For this Class	9 Cumulative Total
0.5	to	4.5 Acres	395	144	83443	.5	28.2	28.2	2.2	2.2
5	to	9.5	533	74	45791	1.2	14.5	42.7	2.9	5.1
10	to	14.5	528	43	25934	2.0	8.4	51.1	2.9	8.0
15	to	19.5	656	39	24019	2.7	7.7	58.8	3.6	11.6
20	to	24.5	650	29	18019	3.6	5.7	64.5	3.5	15.1
25	to	29.5	432	16	9732	4.4	3.1	67.6	2.4	17.5
30	to	34.5	414	13	8324	5.0	2.5	70.1	2.3	19.8
35	to	39.5	473	13	7860	6.0	2.5	72.6	2.6	22.4
40	to	59.5	1448	30	18177	8.0	5.9	78.5	7.9	30.3
60	to	79.5	2368	35	21554	11.0	6.9	85.4	12.9	43.2
80	to	119.5	3351	35	20960	16.0	6.9	92.3	18.2	61.4
120	to	159.5	2845	21	13196	21.6	4.1	96.4	15.5	76.9
160	to	239.5	2099	10	6403	32.8	2.0	98.4	11.5	88.4
240	to	500.0	2133	8	5115	41.7	1.6	100.0	11.6	100.0
			18325	510	308527	5.9				

Walter R. Kuehnle — 1958

Table 13-C

Distribution of Lead Bearing Lands in Lead Region Within Area 147 as Indicated by Old Lead Shafts and Pits as Shown by Bulletin 1015G. U.S. Geological Survey and by the Atlas of the United States Bureau of Mines.

Lead Bearing 40 Acre Units Within the Sections Shown on Table 14-B — Grouped by Density of Indicated Deposits

1 Class Sections with indicated total acres of lead deposits of			2 Total Acreage of Lead Diggings	3 Number Within Class	4 40 Acre Tracts Containing Lead Total Area in Acres *	5 % Lead Diggings are of Total Acreage	6 % of 2610 - 40's Containing Lead Deposits For this Class	7 Cumulative Total	8 % of Total Lead Deposits Contained in 2610 - 40's For this Class	9 Cumulative Total
0.5	to	4.5 Acres	395	237	9480	4.2	9.1	9.1	2.2	2.2
5	to	9.5	533	214	8560	6.2	8.2	17.3	2.9	5.1
10	to	14.5	528	149	5960	8.9	5.7	23.0	2.9	8.0
15	to	19.5	656	197	7880	8.3	7.5	30.5	3.6	11.6
20	to	24.5	650	142	5680	11.4	5.5	36.0	3.5	15.1
25	to	29.5	432	93	3720	11.6	3.6	39.6	2.4	17.5
30	to	34.5	414	100	4000	10.4	3.8	43.4	2.3	19.8
35	to	39.5	473	87	3480	14.6	3.3	46.7	2.6	22.4
40	to	59.5	1448	225	9000	16.1	8.6	55.3	7.9	30.3
60	to	79.5	2368	330	13200	17.9	12.7	68.0	12.9	43.2
80	to	119.5	3351	371	14840	22.6	14.2	82.2	18.3	61.5
120	to	159.5	2845	228	9120	31.2	8.7	90.9	15.5	77.0
160	to	239.5	2099	134	5360	39.2	5.1	96.0	11.4	88.4
240	to	500.0	2133	103	4120	51.8	4.0	100.0	11.6	100.0
			18325	2610	104400	17.6				

* Number within class times 40 acres.

Walter R. Kuehnle — 1958

These lead bearing sections of Area 147, grouped into fourteen classes and arranged in ascending order of the number of acres of lead deposits per section, are also shown in Table 13-B. This table shows the total area of the lead bearing sections and also the total acreage of the indicated lead deposits of all sections falling into each class. It will be noted in column 5 of Table 13-B that within the fourteen groups or classifications into which the sections of land in the lead region of Area 147 have been divided, the lead deposits vary from an average of one-half of one per cent (.5 of 1%) to an average of forty-one and seven tenths percent (41.7%) of the total area of the various sections in which they were located. Furthermore, it is disclosed in columns 7 and 9 of this same table (indicated by arrows) that of the 510 sections containing lead, 358, or 70% thereof, account for only 19.8% of the total acreage of all lead deposits within Area 147. Stated in reverse, these data indicate that eighty percent (80%) of the total acreage of all of the lead deposits within Area 147 are located in only thirty percent (30%) of the 510 sections indicated as lead bearing.

Lead Deposits by 40-Acre Tracts Within Area 147

By reason of the fact that the indicated lead bearing acreage was only 5.9% of the total area of the lead bearing sections within Area 147, as disclosed in column 5 of Table 13-B, these data were further broken down into the number of 40-acre tracts within each section indicated to be lead bearing. The tabulations so made disclosed a total of approximately 24,300 of such 40-acre tracts within Area 147 in the lead region reported by David Dale Owen in 1839. Of these 24,300 lead bearing tracts of 40 acres each, only 2,610, comprising a total of only 104,440 acres, contained within their boundaries the whole of the indicated 18,325 acres of lead deposits within Area 147.

Again, in Table 13-C, these 2,610 tracts of 40 acres each within Area 147 bearing lead have been grouped within the same fourteen classes or sections as first shown in columns 1 and 2 of Table 13-B. It is to be noted by an examination of the different classifications of these lead bearing sections, as shown in column 5 of Table 13-C, that the lead deposits averaged from only 4.2% to 51.8% of the total area of the 40-acre tracts in which they are located. Of the 2,610-40 acre tracts containing lead, 1,774 of them, or 68% account for 43.2% of the total acreage of all lead deposits within Area 147. In other words, on a 40 acre tract basis, 57% of the lead deposits were located within 32% of the 2,610 lead bearing 40-acre tracts of Area 147.

All of the data and other materials recited in this chapter, together with the factual data shown in Tables 13-A, 13-B and 13-C, disclose clearly that the ma-

jor lead deposits as of 1829 were heavily concentrated in relatively few sections of Area 147. This conclusion is further corroborated by the contents of Map 13 - 1.

The presence of shallow lead deposits having value in 1829, and their general locations within Area 147, were known in 1829. Accordingly, while the exact facts as indicated above are hindsight, they serve to reveal the import of what could have been ascertained by a competent geological inspection in 1829, viz., that the total area of lead deposits obtainable from shallow mines and diggings in Area 147 was far less than the 144,000 acres reserved. Consequently a prospective 1829 purchaser would have considered that all mineral (lead) rights of any value, in the lands of Area 147, belonged to the United States.

Summary

The Upper Mississippi Valley Lead Region includes about 3,000 square miles in southwestern Wisconsin, northwestern Illinois, and a narrow strip along the Mississippi River in Iowa. The part of Area 147 in this lead region, comprising 890,000 acres, is a little less than half of the total area. An unglaciated area, its topography has greater relief, sharper contour and better drainage than the glacial plains which surround it. The rough and rolling topography of this non-glaciated region of Area 147 was deeply cut by streams and rivers, and the lead bearing dolomite rock was found exposed upon the surface in many places in the area. In other places it was covered with only a shallow over-burden of loess. However, these lead deposits were by no means uniform throughout the lead region, but were grouped in districts consisting of patchy individual deposits with large areas of barren rock lying between, or were so deeply covered with an over-burden of Maquoketa shale or loess that, even if in existence, such lead fissures or deposits could not be economically located. As of 1829 mining methods had improved but little since the white man had first started operations in the region, and at the time there seemed to be no reason to anticipate marked improvements in mining techniques in the near future. Significant improvements in mining methods and in the use of more efficient machinery were not to become common practice for many years subsequent to 1829. The lead sulphide or galena then being mined contained approximately 85% pure lead, of which only about 65% of the lead was actually recovered because of the crude log furnace method, or process, of smelting then in common use.

The mineral deposits in this general area having commercial or market value in 1829 consisted of lead sulphide or galena, which was found scattered

throughout the district in an erratic pattern, in fissures, and as residual material in the soil above the (cliff) Galena dolomite rock formation. The lead ores then being mined were the near-surface deposits occurring in "diggings" which were separated by wide areas of "barren" or unproductive lead lands. The production of lead ores from depth encountered practical limitations of costs, ore bottoming and of flooding. Zinc mining in 1829 was, at best, only a distant and faint possibility. Consequently, zinc minerals, in 1829, upon the lands of Area 147 were considered to be a nuisance and when encountered by the miners were discarded. Also, in 1829, there existed no practical method of smelting zinc ore. The prospects of mining copper or iron located within the boundaries of Area 147 were extremely poor in 1829. No production of these metals had been made upon the lands of Area 147 up to 1829, and there has been little or none since.

The extent of the lead diggings is generally indicated by Chandler's map of 1829 (Figures 13-14 and 13-14A) which may be compared with the map of Geologist David Dale Owen made ten years later (Figure 13-1) and a map showing all shallow lead "digging" made both before and after 1829 (Map 13-1). Fairly reliable and rather obvious surface indications ordinarily told prospectors where to look for ore, and as a result, most of the important lead areas within the exterior boundaries of Area 147 had undoubtedly been found by 1829. Additional mines, discovered subsequent to 1829, were largely within these areas, either in new fissures or extensions of existing ones. Numerous existing diggings were not considered valuable as little or no ore was raised.

The erratic distribution of the lead ore is indi-

cated by the fact that in 510 sections in which any lead has ever been found, either before or after 1829, the size of the diggings varied from as low as 0.5% up to 41.7% of the area of the section. 80% of the total area of all lead diggings was in only 30% of the total sections ever known to contain shallow diggings of the type having value in 1829. Actually, of the 890,000 acres in the area, the total area of all diggings of this character ever known, either before or after 1829, is 18,325 acres or about 2% of the total size of Area 147 in the lead region (Table 13-A). All 40-acre tracts on which any such lead was ever located constitute 104,440 acres.

These figures are hindsight, but from the extensive exploration of this area for a number of years prior to 1829, the known facts about its geology and the surface indications of possibility of lead ore to the experienced prospectors of the time, it may reasonably be assumed that, although these exact figures were unknown, they represent conditions which actually existed in 1829 and the import of which were either well known or could have been obtained by informed persons at the time.

The reserves for lead of the United States, in Area 147, was 144,000 acres. Actual area of the lead claims probably would not have been considered in 1829 to exceed 21,320 acres after ten years' explorations. It is not reasonable to assume that any informed investor would consider paying for mineral (lead rights) to be enjoyed, if ever, as remainderman at so remote a time as after the claims of the United States for a total of 144,000 acres of discovered lead diggings might have been satisfied. This would have been as apparent in 1829 as it is now.

Chapter 14

MINING ACTIVITY DURING THE 1816 - 1830 PERIOD

The discussion in this chapter relates to the development of the mining activity in the Upper Mississippi Valley Lead Region between 1816 and 1829. Although some development occurred in early years, as previously related in Chapter 12, the principal progress started in 1821, under the closer supervision of the Ordnance Department of the War Department who took over the management in that year, and negotiated leases of 320 acres, each of which provided a rental of 10% of the lead manufactured and required a bond assuring performance of its conditions. Such leases proved inadequate as a sole means of stimulating discovery of the lead bearing lands, and special permits to locate and mine tracts 200 yards square, without bond, were also granted.

Support of the lead price by the tariff measures enacted by Congress in 1825 and 1828, together with the issuance of these special permits to lead prospectors, resulted in the rapid immigration of a mining population into the region, and an increase in lead production during the 1825 to 1829 period. This large influx of prospectors scoured the lead region of Area 147 to such a degree that by 1829 almost all of the principal areas, now known to have contained lead, had been discovered, as we now know. Notwithstanding these early discoveries, however, the total area of discovered lead bearing lands proved to be only a fraction of the unselected area "not to exceed five leagues square," or a total of 144,000 acres reserved by the United States within Area 147.

By the year 1829, as a result of this great mining activity, lead production in the Upper Mississippi Valley Lead Region had increased twenty-fold over that of 1825, and then accounted for three-quarters of the entire domestic production of lead in the United States. Most of this lead production was from Area 147 inasmuch as the lead regions in Wisconsin and Iowa were not yet officially available for development by the white man because of the encumbrances there of Indian titles. The comparatively limited uses for lead within the United States could not absorb both the increased domestic production and the current foreign importations. Consequently, the domestic

lead market became badly glutted, and the price of lead in 1829 dropped to the lowest point in history. At the same time the balance of the lead region including the Iowa lead lands across the Mississippi River to the west of Area 147 (Dubuque's Mines) increased the future potential for production. Accordingly, the five years following 1829, as was indicated at the time, were to be a period of uncertainty and declining lead production in the lead region of the Upper Mississippi Valley, of which Area 147 formed a part.

The rapid expansion in the production of lead ore in the Upper Mississippi Valley Lead Region, preliminary to the conditions of market collapse and stagnation which existed in the area in 1829, had made some prospectors prosperous and wealthy. Others it had not only failed to enrich, but on the contrary, had even made poor. It is certain, however, that this expansion and development resulted in the discovery and location, by the year 1829 of the areas of the principal lead deposits found within the exterior boundaries of Area 147. An historical outline of these facts is included in this chapter.

Leasing Policy of the United States from 1816 to 1821

The Act of Congress of March 3, 1807, which reserved lead bearing land from public land sales, provided that land so reserved should be leased by the President of the United States for periods not exceeding five years.¹

It appears that the earliest recorded attempt to lease mineral lands in the lead area of Illinois under the Act of 1807 occurred on May 15, 1816. On this date there was a published request under Presidential authority by Michl. Jones, Register, and S. Bond, Receiver, of the Kaskaskia Land Office, Illinois, which at that time embraced the entire western half of Illinois, for proposals to lease thirty tracts of 640 acres each for three - year periods. This was an optimistic objective in view of the actual accomplishments in leasing mineral lands during the thirteen

¹ 2. U.S. Stat. 447, 448, 449, Section 5, the statute as originally enacted allowed five - year leases. However, the subsequent

leases were executed for only three years under adopted regulations.

years to follow. On June 29, 1816, this published notice was supplemented by another stating authorization by the Commissioner of the General Land Office to accept one-eighth or more of the lead made as rent for the leased premises.² (Figure 14 - 1) As far as has been ascertained, no leases productive of any lead rentals were made pursuant to these 1816 offerings by the Commissioner of the General Land Office.

and (4) at Bee Town also within Area 147, and (5) at Blue Mounds, outside of Area 147.⁴

The exact date of the first permanent settlement by whites in the region is not known. Among those probably there before 1820 was Jesse W. Shull. The first recorded white woman in the lead area was S. H. January who built a log cabin near Galena in 1821.⁵ Tradition has it that a man named January for some years previously had conducted a trading post at that mine.⁶

In 1820 diggings were reported on both the Illinois and Iowa sides of the Mississippi River. They were located at (1) Fever River, (Galena, Illinois) six miles above its mouth, on both sides; (2) fifteen miles up the Apple River — canoes go all the way; (3) four to five miles up Sinsinawa Creek—only small canoes reach it; (4) nine miles up the Mechant Hatche (small unnavigable creek); six miles above the Little Macoultely Creek in Wisconsin (Potosi); (5) Many more on the Wisconsin; (6) Dubuque (Iowa); (7) six miles up the Little Macoultely Creek (Durance) (Iowa); (8) Red Head's Village, six miles above the Grand Macoultely on the west bank of the Mississippi.⁷

Superintendence and Leasing of Mines After 1821

Apparently the efforts between 1816 and 1821 to lease the lead mines within the Upper Mississippi Valley Lead Region by the Commissioner of the Land Office, under the supervision of the Treasury Department, did not prove to be a source of profit. In this regard, the Secretary of the Treasury wrote to the Secretary of War in 1821, that the product of the lead mines "added nothing to the revenue." Accordingly, in that year the superintendence of lead mines in the United States was transferred to the Secretary of War, to be administered thereafter through the agency of the Ordnance Department of the United States Army.⁸

In 1822 the Ordnance Department advertised in western newspapers, offering to receive proposals for leasing United States Lead Mines at a rental of 1/10 of all pure lead manufactured. Leases for three years of not exceeding 320 acres within Area 147 were

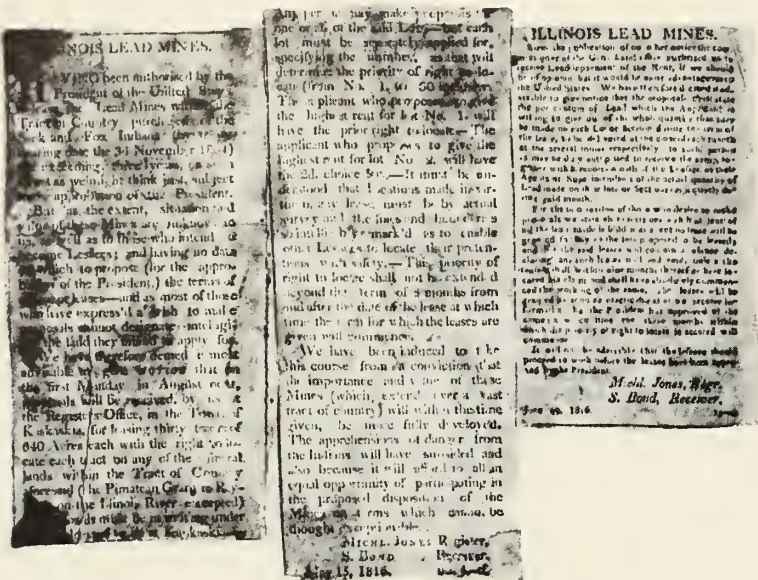


FIGURE 14 - 1 Notices Published in 1816 by General Land Office, Inviting Proposal to Lease Thirty 640-Acre Tracts for Lead Mines in Region Including Area 147. (From Record Group 156, National Archives.)

The Beginning of Permanent Settlement

The permanent settlement of the area probably began with the arrival of Jesse W. Shull in 1819 with military protection at Gratiot's Grove, located just south of the present Shullsburg, in LaFayette County, Wisconsin, within Area 147. (See Figure 13 - 1 for the location of Gratiot's Grove upon the David Dale Owen Map of 1839.)³ By 1820 other lead deposits had also been found in Illinois, (1) north of Galena near Elizabeth at Vinegar Hill diggings within Area 147, and in Wisconsin (2) at Fair Play, (3) at Potosi,

² Document, Record Group 156, National Archives, Washington, D.C.

³ Chapter 13.
op. cit. Bain, 1916 — Zinc and Lead Deposits of the Upper Mississippi Valley — Bulletin 294, p. 3.

⁴ Forsyth, Thomas, 1872 — Journal of a Voyage from St. Louis to the Falls of St. Anthony in 1819. Wisconsin Historical collections, Vol. VI, pp. 194 - 195.

⁵ NOTE: Probably related to Thomas January of Kentucky who established a Hilltop Trading Post on January Point in 1824.

⁶ op. cit. Schockel, 1916 — Settlement and Development of Jo Daviess County — Illinois Geological Bulletin 26 — p. 184.

⁷ op. cit. Trewartha, 1940 — A Second Epoch of Destructive Occupants in the Driftless Hill Land — V. 30, p. 124.

op. cit. Forsythe, 1872 — Wisconsin Historical Collections Vol. XIII, p. 289.

⁸ Letter — W. H. Crawford, Secretary of Treasury, to Hon. J. C. Calhoun, Secretary of War, November 29, 1821. (Record Group 156, National Archives.)

Senate Documents Vol. 4, 29th Congress 1 Session, Serial 473. No. 87. p. 6.

available to the public during the year 1822.⁹ However, only eighty applications for leases were received as a result of this advertisement, and¹⁰ few of these resulted in approved leases.

First Mineral Leases Granted

On January 4, 1822, conditional leases were granted to Messrs. Carneal and Johnson, and to Messrs. Suggett and Paine, all of Kentucky, for 160 acres of land to each of these two partnership ventures.¹¹

On February 13, 1822, Lt. Clark Burdine, then on ordnance duty in Washington, was ordered by Lt. Col. George Bomford to accompany these first lessees into the lead region in order to identify with surveys, maps and plats the sites to be chosen and worked by the lessees, as well as "so much of the lands and country immediately adjoining, and more or less distant, as shall convey to government accurate knowledge of the whole." Lt. Burdine was also instructed to obtain "information upon all points, relative to the lead mine, and mineral lands of the United States, that may prove useful to the government." In his orders, Lt. Clark Burdine was cautioned against permitting interference with any established mine locations, although it was the opinion of the Ordnance Department that all old leases had expired.¹²

Prior to this time, the only traders or other residents within Area 147 were at Fever River (Galena), Illinois, and 500 to 2,000 Sauk and Fox Indians did the mining. There was a traders' village of from ten to twenty cabins six miles up the Fever (also known as the Bean or Galena) River. In 1822 all of the whites in the mining district lived there. Thirty white people wintered there in 1822 and 1823. The next summer there were 74, including several Negro slaves of the white residents.¹³

In either 1822 or 1823 Col. James Johnson of Kentucky arrived within the lead region, bringing with

him a force of workers from southern Illinois and Kentucky, together with 150 slaves and a large outfit of tools.¹⁴ Under military protection, Col. Johnson began to mine lead successfully within Area 147 near the present city of Galena, Illinois.¹⁵ Thereafter, others soon followed Col. Johnson's example by moving into the area. The year 1823 appears to be the date for the start of extensive explorations, the beginnings of "active systematic mining on a relatively large scale," and of active migration to the lead region of Area 147 and elsewhere within the Upper Mississippi Valley Lead Region.¹⁶

In 1823, due to continued surveying difficulties, the Ordnance Department, through Superintendent of the Lead Mines, was empowered to grant provisional leases, each of which, however, was subject to the subsequent approval of the President of the United States. Such provisional lessees had the privilege of working a mine on the leased property before final approval by the President.¹⁷ However, though provisional leases were to be readily obtained by June 30, 1824, only ten lessees were reported at work at the mines.¹⁸ The fact that so few lessees were reported at work in the area by 1824, as against an estimate of nearly one hundred applications made therefor in response to the Ordnance Department's advertisement for bonded lessees in 1822, coincides with the conclusion of Lt. M. Thomas, Superintendent of Lead Mines at Fever River, expressed to Lt. Col. George Bomford on April 14, 1825, to the effect that many of these first applicants for leases had attempted to speculate on the resale of their lease applications without success.¹⁹

The Town of Galena, Illinois, 1822-1829

Galena, located on the navigable Galena (Fever or Bean) River, was the center and chief "port of entry" to the lead mining region of the Upper Mississippi Valley. Consisting of only one log cabin in 1822,

⁹ Niles Register, August 3, 1822, Vol. 22, p. 357.

¹⁰ Carter, Clarence Edwin, Territorial Papers, Vol XI, Michigan Territory, pp. 291-3; Letter, November 12, 1822, Lt. Col. George Bomford, Supt. of Lead Mines, to John C. Calhoun, Secretary of War. (Record Group 156, National Archives).

¹¹ Letters: February 13, 1822 — George Bomford, Lt. Col. U.S.A. on Ordnance Duty War Department, to Thomas Forsyth, U.S. Indian Agent, St. Louis, Missouri, and to Alexander Wolcott, Jr. and Nicholas Boinvin, Indian Agents on the Mississippi (Record Group 156, National Archives).

NOTE: Later leases were for 320 acres see Table 14-A.

¹² Ibid. Letters: February 13, 1822, George Bomford, Lt. Col. U.S.A., to Lt. Clark Burdine, U.S.A. (Record Group 156, National Archives).

¹³ op. cit. Trewartha, 1940 — A Second Epoch of Destructive Occupance in the Driftless Hill Land — V. 30, pp. 124 - 127.

¹⁴ Brother of Richard M. Johnson who had been Vice Presi-

dent of the United States. Harper's, Vol. 32, p. 686.

¹⁵ op. cit. Meeker, 1872 — Early History of the Lead Region, Vol. VI, p. 272.

op. cit. Schockel, 1916 — Settlement and Development of Jo Daviess County — p. 184.

¹⁶ Ibid. Schockel, 1916 — p. 184.

op. cit. Trewartha, 1940 — Second Epoch of Destructive Occupance in the Driftless Hill Land — V. 30, p. 124 - 127.

¹⁷ Letter — June 10, 1823 — Lt. Col. George Bomford to Clement March, St. Louis. (Record Group 156, National Archives).

¹⁸ Letter — December 14, 1824 — Lt. Col. George Bomford to Lt. Thomas, St. Louis, Mo. (Record Group 156, National Archives).

¹⁹ Letter — April 14, 1825 — Lt. M. Thomas to Lt. Col. George Bomford. (Record Group 49, National Archives).

it later became the smelting and exporting center of the mines, as well as the required base for supplies.

Two important events in the history of Galena occurred in 1823, viz., (1) the arrival of a colony of 43 people from Cincinnati under the leadership of Dr. Moses Meeker, and (2) the establishment there of a store,²⁰ the latter being a great boon to miners within Area 147 who were separated from their nearest neighbors by hundreds of miles of wilderness.²¹ By 1828 there were 150 houses and 800 people, with 42 stores and warehouses. Social relations were primitive in Galena. With the heavy inflow of immigration, inhabitants of Galena crowded at the base of the "Bluffs" and shifted frequently from place to place, "many of them living in clefts and holes in the rocks." The clay streets of the village were "knee deep in mud" in the spring. Household effects were the barest, as everything came from St. Louis, Missouri.²²

The City of Galena was laid out in lots in 1826, and "use permits" were granted. In 1827 the State of Illinois organized Jo Daviess County with Galena as the county seat of government. In February 1829 Congress passed an Act providing for the laying out of a village at Galena (Figure 14-2).²³ The plat was not to exceed one section in size, and town lots were not to exceed a quarter of an acre. Unimproved lots were to be sold for not less than \$5.00, and those which had been improved at various prices, the occupants always having the right of preemption.²⁴ It was by this action that the United States selected one section of 640 acres, the townsite of Galena, as part of the lands reserved to it under Article 2 of the Treaty of August 24, 1816.²⁵

Mining Permits and Smelter Licenses Issued

On August 18, 1824, Lt. M. Thomas was appointed superintendent of lead mines,²⁶ but it was not until March of the following year he arrived at the United States mines located in the vicinity of Fever River of Illinois. Up to 1824 three-year leases of

320 acres at rentals of 10% of the pure lead manufactured included the rights of both mining and smelting of lead. Lessees were required to give a \$5,000 bond for faithful performance under the lease. However, lack of capital and the patchy character of the location of lead deposits made it apparent that such an arrangement would be desirable for only a very limited number of sites.²⁷ Upon his arrival at Fever River in 1824 to take over the superintendence of the United States Lead Mines, Lt. M. Thomas found fifty miners and reported "but few miners at work and but few locations considered worth giving bonds for the occupation thereof."²⁸

In his report of April 14, 1825, Lt. M. Thomas made a request to his superior, Lt. Col. George Bomford, for authority for the issuance of lead mining permits for small sites, without bond. In a previous letter Lt. M. Thomas had stated that in his opinion the existing system requiring leases of 320 acres had a detrimental effect on the development of mining, pointing out that,

Laborers or miners are generally of that class unable to give bonds, yet the whole prosperity of the mines in their present state depends on the practical miner.

Accordingly, in the year 1825, a permit system was inaugurated for the area allowing two miners to stake off a claim of 300 yards square in north, south, east and west lines. An example of such a permit to dig lead is disclosed in Figure 14-3.³⁰

It was this permit system, rather than the issuance of 320-acre leases, which gave the real stimulus to lead prospecting and mine development, with the result that by 1829 most of the lead bearing areas within Area 147, since known to have contained accessible deposits, had already been discovered and then contained mines. At the same time a system for the issuance of licenses to bonded smelters was instituted to make available adequate processing facilities for both these permit miners and for those operating under bonded leases. Such smelter li-

²⁰ Ibid. History of Jo Daviess County (Illinois), (1878)—pp. 238 - 242.

op. cit. Meeker, 1872 — Early History of the Lead Region of Wisconsin, p. 276.

op. cit. Pooley, 1908 — Settlement of Illinois 1830 - 50—p. 463. The first general store or trading house was erected and occupied in 1824 by Fredrick Dent of St. Louis, Missouri, the father-in-law of General Grant. Harper's Magazine, May 1866-Galena and Its Lead Mines, Vol. 32, p. 692.

²¹ Galena Advertiser, August 10, 1829 — A table appears in this issue showing distance from Galena, Illinois, to other inhabited places. For example, St. Louis, Missouri, was 500 miles; Fort Armstrong, Illinois, (Rock Island) 100 miles; Peoria, Illinois, (Fort Clark) 180 miles; and Green Bay, Wisconsin, 440 miles.

²² op. cit. Schockel, 1916 — Illinois State Geological Survey, Bulletin 26 — Chapter 19, p. 190.

²³ Act of Congress, February 5, 1829, 4 Stat. 334.

²⁴ op. cit. History of Jo Daviess County, 1878 — p. 331.

Bogges, Arthur Clinton, 1908 — Settlement in Illinois 1778-1830 — Chicago Historical Society, p. 152.

²⁵ 7 Stat. 146.

²⁶ American State Papers, Public Lands, Vol. 4, p. 523.

²⁷ Letter, September 26, 1825 — Lt. M. Thomas to Lt. Col. George Bomford, (Record Group 156, National Archives.)

²⁸ Letter, April 14, 1825, Lt. M. Thomas to Lt. Col. George Bomford (Record Group 156, National Archives).

²⁹ Letter (from Potosi, Missouri) April 14, 1825, Lt. M. Thomas, United States Army and Supt. of Lead Mines to Lt. Col. G. Bomford, Ordnance Department, United States Army, (Record Group 49, National Archives).

³⁰ Permit and Regulations of Ordnance Department, United States Army, attached to Letter, April 14, 1825, Lt. M. Thomas to Lt. Col. G. Bomford. (From National Archives, Record Group 49)

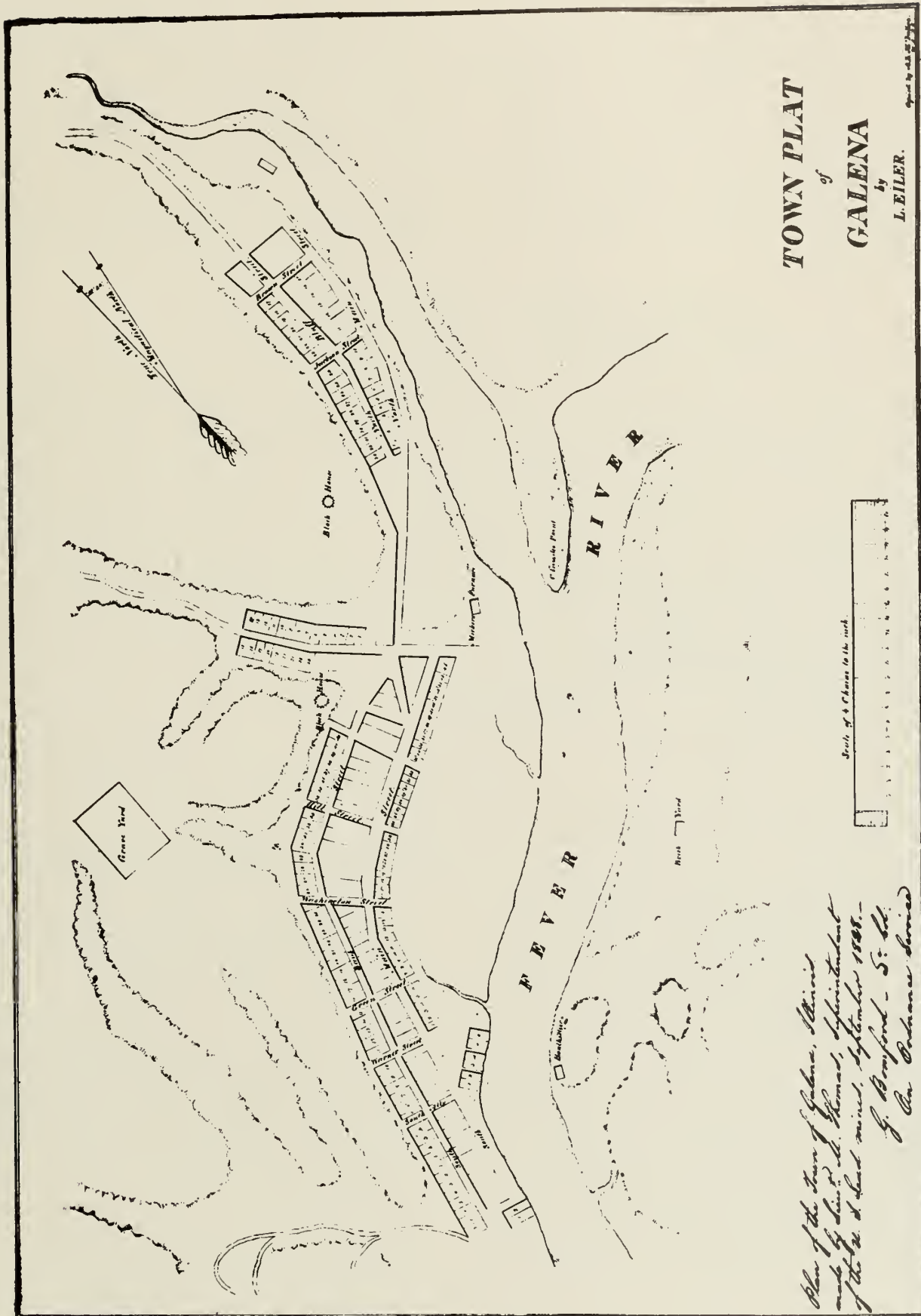


FIGURE 14 - 2 Town Plat of Galena, Illinois, 1828.

(From Vol. 481 — Progress of Illinois Surveys — Illinois Auditor's Vault, Archives, Springfield, Illinois.)

censes were for one-year term, with a \$10,000 bond conditioned upon the faithful performance of the conditions contained in the license. On September 26, 1825, Lt. M. Thomas, the Superintendent of Lead Mines, suggested that the smelter's bond of \$10,000 also be allowed to cover a total of 320 acres in such scattered locations as would be deemed proper "of not less than four acres in a place — this to be located from time to time in such manner as will secure the laborer his earning and prevent a monopoly on the part of the smelters".³¹

treaty to the United States in 1816 as part of its mineral reserves of 144,000 acres, Lt. M. Thomas continued to point out the impracticability of the 320-acre leasing regulations then in force. He continued to advocate the granting of licenses of smaller size, which, as experience in existing mines and "diggings" within the area then indicated, conformed to the erratic pattern of the scattered mineral deposits of the region. After the issuance of new mining regulations in 1827 reducing the permit area from 300 yards square to 200 yards square, with rentals to con-

Form of Permit to Mine.
 _____ is hereby permitted to dig
 or mine on United States land - which is not leased
 or otherwise rightfully occupied - he is not to set fire
 to the prairie, grass, or woods and must deliver
 his mineral to a licensed smelter and comply
 with all regulations. -
 October 1825.

FIGURE 14-3 Form of Mining Permit for 300 Yard Square Mining Sites, 1825. (From Record Group 49, National Archives.)

Increased Lead Discoveries Under 1825 System

Under the permit system put in effect in 1825 by the Ordnance Department of the Army, the discovery of lead grew by leaps and bounds. The total area of lead bearing lands discovered and developed under permits for such small diggings far out-stripped those covered by the bonded 320-acre leases. As of August 1, 1827, Lt. M. Thomas, Superintendent of Lead Mines, reported to his superior, Col. George Bomford, that less than 5,000 acres had been leased, and that probably three times that much was then being developed by permit miners and smelters, in all about 20,000 acres out of the permissible selections of reserves totalling 144,000 acres reserved to the United States under Article 2 of the Treaty of August 24, 1816, with the Ottawa, Chippewa and Potawatomi Indians.³²

With the tangible evidence of these results under the permit system, which resulted in the location of lead ores and identifying those areas reserved by

tinue at 10 per cent of the pure lead manufactured, as detailed in Figure 14-4, Lt. M. Thomas in an official letter to Col. George Bomford wrote:

By the treaty of 1816 the U. S. are permitted to locate five leagues square or 144,000 acres, but 1/7 of which amount is at present occupied.

Lt. M. Thomas further stated in the same letter that

The idea has gone forth that the five leagues square were to be located in a compact form, this is plainly an error, the words of the treaty are clear and explicit, it is sometimes contended that locations should be in bodies of 640 acres, one mile square, I see no good reason for such locations, the right to locate was obtained for a purpose altogether unique, it was for mining and such cultivation only, should be allowed to support lessees and afford vegetables, ten acres are frequently sufficient to work a large mine, and I see no cause for extravagantly expanding the right to locate. The Ottawa, Chippewa and Potawatomi Indians never frequent this section of the country and it appears from the tenor of the Treaty of Prairie du Chien, that the title of the Winnebagoes to the country

³¹ op. cit. Letter, September 26, 1825 — Lt. Thomas to Lt. Col. George Bomford. (Record Group 156, National Archives).

³² Letter — August 1, 1827 — Lt. Thomas to Col. George Bomford, pp. 2, 5, (Record Group 156, National Archives).

Regulations for Miners revised the 1st of July 1827 to go into operation the 1st of August 1827.

- 1st Persons desirous of mining will on their arrival in the Country apply at the Superintendent's Office, where they will be furnished with a permit upon signing the following. (Regulations)*
- 2nd We the subscriber do voluntarily agree to deliver at least once a month, to a licensed Smelter, all lead ore which may come into our possession at the U. S. Lead Mine, upon receiving 350 pounds of Pb Lead, or an equivalent in money, for each 1000 pounds of clean Ore paid within 25 days from the date of delivery of the Ore at the diggings.
- 3rd We agree not to deliver any Lead ore to any other person than a licensed Smelter, nor to deliver ore to one Smelter when we are indebted to another, without the consent of such Smelter.
- 4th We agree further that we will forfeit to the U. S. all our right, claim or interest, to any Lead Ore which we may have, or to any discovery of Lead or to any lot or piece of ground upon proof of our having violated
- 2nd either of the above Regulations, should persons mine, or dig without first obtaining a permit they will forfeit the mineral they may obtain, and be liable to a prosecution for trespass and damages.
- 5th Any mine who gives false testimony in any dispute or arbitration or before any Magistrate, or who is convicted of stealing Lead Ore or any other thing, selling fire to the foraine, graft, or words, cutting timber when it is prohibited, shall forfeit his permit to mine, or dig, and no Smelter shall purchase the ore or give them employment.

FIGURE 14-4 Regulations for Miners Revised the 1st of July, 1827 to go into Operation for the 1st of August, 1827. (From Record Group 49, National Archives.)

3. In Order to prevent mistake or dispute, two or more men must work together, who will previously measure off 200 yards square, and the line running east west, north and south, at each corner a stake at least six feet high must be placed, marked with the name of at least one of the parties, all minerals obtained within the Statute will belong to the person who work the ground.
4. Each Lot laid off as above provided, will be understood any person permitting Saturdays and Sundays excepted; unless the ground should be under construction, Not more than four days will be allowed to elapse, after the Order is issued from the Office.
5. It is to be distinctly understood that for each two men, whether hired or in partnership, One Lot may be held, provided it is worked according to the 11th Regulation in every lot, or evasion by trifling work, such as throwing out a few shovels full of earth, or the Occupancy of more ground than could be dug by any two miners, will cause a forfeiture. Upon relinquishing or abandoning the ground the Statute must be drawn.
6. All Minerals obtained, when removed from the place where it is dug, must be sold to a Licensed Smelter, and to no other other person whatever. No Lien, Lot, or discovery, or permission to be sold or otherwise conveyed to any person but an authorized miner, or Licensed Smelter - and when a mine is included to a Smelter, that debt shall be good against the lot ^{or} share of the mine, even if it should be sold or transferred to another.
7. When miners are desirous of building cabins or cultivating gardens; they will apply for a special permission - all fencing must be ~~done~~ ditching or sodding, and if requisite stakes and one side may be

put on it,
 8th (All the Assay require twenty men to be kept ~~at work~~, at
 work on them; and any mine is at liberty to go upon these
 grounds. Should the Lapse not keep the require men on the
 premises.

9th In disputes ^{between} ~~between~~ ~~between~~ lots &c, the matter must be re-
 ferred to disinterested persons. The party aggrieved will apply at the
 Supt's Office, where an order to arbitrate must be furnished. Should
 the other party refuse to arbitrate, upon notice being given, a
 failure to the complainant of all claim, right or interest in
 land, lot, or discovery, will take place. Not less than three nor
 more than five arbitrating to be mutually chosen by the contending
 parties as follows. If three be the party number, one by each
 party, which two shall choose, if five are required, two by
 each party, who shall choose a fifth. The arbitrating men
 mutually shall be sworn. Should a majority of the arbitrating not
 agree, the case will be referred to the Superintendent, or a Just, whose
 decision shall be final. In making this appeal, ^{or} reference to
 the Superintendent, the testimony must be sworn to by the arbi-
 trating, and signed by them all, sealed up and sent to the
 Office of the Supt. when a written decision will be given,
 a copy of which may be obtained by both parties.

It is necessary to observe that all quibbling and subtleties with
 respect to the regulations will be actively discountenanced.

The plain and common received meaning of the words
 used in them will at all times govern, construing respecting them.

It is not desired that the Character for honest Conduct

*seeking who the miners in this country have heretofore so
 justly obtained, will be retained a few civil dispossessions. persons
 can easily be governed by those ^{well} inclined, and should it become
 necessary to put the Law in force, against trespassing it will be
 done without respect to persons. ~~Thomas M. Thomas~~*

*about mining
 The publication referred
 to by Mr. B. B. in con-
 tinuation to Mr. B. B. is
 May 18th 1829.*

lying east of the Ottawas land on the waters of the
 Rock River is very doubtful.³³

During the same year, in a subsequent letter to
 Col. George Bomford, Lt. M. Thomas continued to
 advocate his preference for small lead mine leases.
 In this respect he wrote:

I am fully of the opinion that leasing so large a
 quantity as three hundred and twenty acres at the up-
 per mines, has a tendency to injure the mining inter-
 ests, which I will explain in my report on that subject,
 it would be much preferable were no leases to be
 granted there, for more than ten acres to any one per-
 son, I would therefore suggest that the Leases now sent
 be not acted upon for the present.³⁴

Area of Leases, Licenses and Permits

The soundness of Lt. M. Thomas' estimate of the
 mining situation within Area 147 with respect to the
 comparative lack of demand for large mining tracts
 is borne out by records of the War Department which
 show a total of 38 of three-year bonded lead mine
 leases of "about" 320 acres each, or a total of approx-
 imately 12,000 acres, were made and approved. (May
 21, 1825, to March 8, 1829. Table 14-A, of this re-
 port.) The description of the locations of the leased
 areas contained in these leases were based on then
 adjacent locations and contemporary land marks, as

³³ Ibid. Letter, August 1, 1827, Lt. M. Thomas to Col.
 G. Bomford. (Record Group 156, National Archives).

NOTE: The reservation of 144,000 acres referred to as being
 reserved to the United States under Article 2 of the Treaty of
 August 24, 1816, is exclusive of the three leagues square re-

serve at the mouth of the Ouisconsin River, also provided for
 under this treaty.

³⁴ Letter, September 20, 1827, Lt. M. Thomas to Lt. Col.
 George Bomford. (Record Group 156, National Archives.)

MINING ACTIVITY DURING THE 1816 - 1830 PERIOD

Table 14 - A

Table of Bonded Three - Year Lessees of 320 Acres

	Lessee	Date of Lease
(1)	Joseph Hardy	May 21, 1825
(2)	I. P. B. Gratiot	August 3, 1826
(3)	Ira Cottle	October 16, 1826
(4)	Owen Reilly	January 30, 1827
(5)	Dennis O'Neil	February 27, 1827
(6)	John Young	March 17, 1827
(7)	Wilson P. Hunt	April 2, 1827
(8)	Cyrus Mackey	June 17, 1827
(9)	A. P. Vanmatre	June 19, 1827
(10)	Jonathan Browder	June 25, 1827
(11)	Moses Meeker	June 26, 1827
(43)	David G. Bates	May 27, 1827
(12)	Richard W. Chandler	July 1, 1827
(13)	Thos. Ray	July 1, 1827
(14)	John McDonald	July 3, 1827
(15)	James Craig	July 20, 1827
(16)	James G. Soulard	July 21, 1827
(17)	Alfred K. Stevens	August 14, 1827
(18)	Orris McCartney	August 22, 1827
(19)	Horatio Newhall	March 5, 1828
(24)	John Boles	May 7, 1828
(20)	Patrick Hogan	June 30, 1828
(21)	John McPersmith	July 18, 1828
(22)	Ezra Lamb	July 26, 1828
(23)	Charles Galloway	August 30, 1828
(25)	Richard Gentry	July 26, 1828
(26)	Fleet S. Clopton	July 26, 1828
(27)	William Troy	August 7, 1828
(28)	Owen Smith	August 11, 1828
(29)	E. Brigham	August 24, 1828
(30)	John Dougherty	October 1, 1828
(31)	R. R. Holmes	October 1, 1828
(32)	Samuel Lemon	December 2, 1828
(33)	Francis Allen	January 1, 1829
(34)	E. E. Brock	January 3, 1829
(35)	Abner Nichols	January 7, 1829
(36)	Thomas F. O'Neil	January 24, 1829
(37)	R. H. Kirkpatrick	January 24, 1829
(38)	Will M. B. Slemons	March 8, 1829

(The numbers appearing on the leases are those originally assigned to them.)

Source: Record Group 156, National Archives. The 38 leases as above listed do not include two conditional leases for 160 acres each issued on January 4, 1822 to Corneal and Johnson and Suggett and Paine.

op. cit. Letters of February 13, 1822 from Lt. Col. George Bomford to Thomas Forsyth and Alexander Wolcott, Jr. and Nicholas Boinvin.

Walter R. Kuehnle — 1958

disclosed in Figure 14 - 5, and defy present efforts to determine their exact situations.

The records of the War Department further disclosed that twenty - two (22) smelting licenses each for one year, totalling a maximum possible acreage of 7,000 acres, (see Figure 14 - 6) were granted. (May 4, 1825 to February 19, 1828 Table 14 - B.)³⁵

³⁵ NOTE: Leases described the area leased by metes and bounds while smelter licenses defined no location. As some of the lessees and licensees are identical there may be some overlapping of lessees and smelters on the same site. Further there is no certainty that all smelter licenses included

It was these licensed smelters, and lessees with smelters, which bought ore from miners having legal permits, and thereafter processed it into lead and paid the government the rental of 10% of all manufactured. The books of such smelters and lessees were subject

Table 14 - B

Table of Bonded One - Year Smelter Licenses of 320 Acres

	Lessee	Date of Lease
1.	Moses Meeker (Lead Smelter)	May 4, 1825
2.	David G. Bates	May 9, 1825
3.	Henry Gratiot (of St. Louis)	October 5, 1825
4.	I. P. B. Gratiot	March 7, 1827
5.	P. A. Lorimer	March 8, 1827
6.	John York Sawyer	April 15, 1827
7.	James Murphy	June 1, 1827
8.	Matthias C. Comstock	June 7, 1827
9.	Joseph Hardy, Jr.	June 7, 1827
10.	Moses Meeker	June 14, 1827
11.	Horatio Newhall	June 18, 1827
12.	Robert A. Heath	August 11, 1827
13.	Joseph A. Sire	August 16, 1827
14.	Roy Gratiot and J. B. Sarphy	August 16, 1827
15.	John C. Holozan	August 31, 1827
16.	Robert Collet	September 15, 1827
17.	John Phelps	October 25, 1827
18.	Lemon Parker	October 17, 1827
19.	Allen Hill	October 25, 1827
20.	A. L. Johnson	November 26, 1827
21.	H. C. Bushnell	February 19, 1828
22.	Allen Hill	October 15, 1827

Source: Record Group 156, National Archives.

Walter R. Kuehnle — 1958

at all times to inspection by the resident Superintendent of Mines of the War Department. The \$5,000 and \$10,000 bonds given by them were to guarantee payment of the amount of rent due the government. There seems to be no record of the number, much less the legal descriptions of the "ten - acre" permits issued, of either the 300 yard square or the later 200 yard square locations. However, there is an estimate by Lt. M. Thomas, Superintendent of Mines, that less than 15,000 acres were under this kind of permit in 1827.³⁶ The actual extent of reported lead "diggings" and shafts as recounted in the preceding chapter seems to offer the best data for estimating the probable total area of all early mining of lead deposits worked under both "permits" and leases issued under the supervision of the Ordnance Department of the Army.

Accordingly, the approximate 12,000 acres of approved lead mine leases, and 7,000 acres of lead smelter leases, plus the 640 - acre tract set aside by the Act of Congress of February 5, 1829, for the town-site of Galena, Illinois,³⁷ total approximately 20,000

320 acres. (See Figure 14-5, 14-6.)

³⁶ Ibid. — Letter Lt. M. Thomas to Col. George Bomford August 1, 1827 (Record Group 156, National Archives.)

³⁷ 4 Stat. 334.

38

59

Will M. B. Shermans

This Indenture, Made and entered into this eight day of March 1829, between Sub. M. Shermans of the Army of the United States, acting under the direction of the Hon. John H. Eaton Secretary of War, of the first part, and W. M. B. Shermans of Free River, of the second part, WITNESSETH, That the said party, of the first part, for and in consideration of the rents, covenants, and agreements, hereinafter mentioned, doth, by these presents, and by and with the approbation of the President of the United States, grant, lease, and farm unto the said party of the second part, his heirs and representatives, for the full term of three years, from and after the date hereof, a tract of land, the property of the United States, supposed to contain a mine or mines of Lead Ore, according to the annexed Plat of Survey:—

Field notes of a survey of mineral lands for W. B. Shermans on the waters of the river within a distance from which a P. O. 12. in. diam. S. 87° E. 33 poles the ground which W. B. Shermans owns to S. 44. 16. about 65 A.C. - Thence N. 32° poles through N. end of a small grove to a H. O. 5. in. diam. from which a H. O. 16. in. diam. bears S. 52. N. 12. poles on top of a high ridge - thence S. 16° poles a stake from which a white oak 14. in. diam. to S. 64° H. 8 poles a white oak 10. in. diam. to N. 59° E. 4. poles - thence E. 320 poles to a stake in the prairie, a little S. of the Circumcision Road - thence N. 160. poles to the beginning corner, containing 320 A.C. March 8th 1829 (signed) Samuel Cole

See map on page 10

containing about three hundred & twenty Acres, to have and to hold the same, from and after the time above stated, for the term aforesaid, unto the said party of the second part, his heirs and representatives, upon the conditions following, viz:

FIRST. That the said party of the second part, hereby binds and obliges himself to commence mining, and (if there is wood upon the premises) to erect a mill upon the said land, within two months after the date hereof, and to continue such mining and manufacturing with a force which shall at no time be less than twenty men, whether said season permitting, without cessation or intermittence. Should the said second party not have twenty laborers in his employ, it is understood and agreed, that any miner may go upon the above premises and work provided he will deliver to the said second party, all the ore he may dig, upon his payment, or securing to be paid, to him the usual quantity of lead (on an average) for each 1000 pounds of ore, and the said second party admitting the premises to be so occupied, will be considered the same as keeping twenty men in his employ.

SECOND. That the said party of the second part, at the end of every month, shall pay to the said party of the first part, one-tenth of the product of said mining and manufacturing operations, and to permit the said party of the first part, to use of the United States, and deposit the same in a storehouse near Free River, which shall be designated by the said first party, free of expense to the United States.

THIRD. The said party of the second part, agrees to make, at his own cost and expense, all the necessary preparation and improvements for the prosecution and fulfillment of this indenture on his part, to which purpose he is allowed and permitted the use of all stone, wood and water, as may be found upon the premises, and as may be required without waste or extravagance.

FOURTH. It is agreed and understood between the said parties, that the second part shall keep a book or books, in which he shall state a true and faithful account of all the Mineral and Lead which he shall raise, purchase or manufacture, from time to time, which said book or books shall always be open and ready for the free inspection and examination of the said party of the first part; and the said second party agrees to furnish the said first party with a monthly abstract or return of such mining or manufacturing operations, at the end of every month, agreeably to a form to be furnished by the first party, which shall contain a list of all the miners or laborers at work at said mine, and which said books and returns the said second party shall deliver to the said first party, every month with or without affirmation.

FIFTH. It is further understood and agreed between the said parties, that the said party of the second part shall not, at any time, nor in any manner whatever, dispose of, or sublease the said land, to any person or persons whatever, that at no time, under any pretext, shall the said party, or any one by or under his authority, convey away or remove the whole, or any part, of the Mineral or Lead from said land, or places of manufacture, without the consent and approbation of the said party of the first part, and all royalties of rent which shall be due and owing by said second party, shall be settled up and paid.

SIXTH. The said second party agrees not to permit any miner or laborer to commence working at the said mine, until he signs the rules and regulations thereof, one of which shall be, not to remove, sell, or otherwise dispose of, any Ore or Mineral he may dig, to any other than the said second party, nor to allow any person to commence working after he has broken said regulation.

SEVENTH. It is, moreover, further and explicitly understood and agreed between the said parties, that, in the failure of the said party of the second part, to carry into effect any part of this indenture, or agreement, or on his non-compliance with any of its stipulations, the said first party may declare said land forfeited, at his option, and re-enter and take possession of the premises, as if no such indenture or agreement, had been entered into.

IN TESTIMONY WHEREOF

We, the said parties to these premises, have hereunto signed our names, and affixed our seals, the day and year before written

WITNESS:

James Hughes
W. Whelan
W. S. Atty

Approved by W. M. B. Shermans
Andrew J. Van Klee

M. Shermans
Sept 2nd 1831
W. M. B. Shermans

Reyes Lewis
July 23rd 1831

FIGURE 14 - 5 One of the Thirty-Eight Three-Year Bonded Leases of 320 Acres for Lead Mining Purpose Made by the Secretary of War in the Upper Mississippi Valley Lead Region During the Period of May 21, 1825 and March 8, 1829. (Record Group 156, National Archives.)

MINING ACTIVITY DURING THE 1816 - 1830 PERIOD

16

P. A. Sorimier 5

This Indenture, Made and entered into this Eight day of March 1827, between H. M. Thompson - Superintending the United States' Lead Mines, of the first part, and P. A. Sorimier of the second part, **WITNESSETH**, That the said party of the second part is hereby permitted to purchase and smelt Lead Ore at the United States' Mines on the upper Mississippi, for the period of one year from the date hereof, upon the following conditions, to wit:

FIRST. All purchases, or other acquisitions, of Ore, Ashes, Zane, or Lead, to be from persons authorized to work the Mines, either as lessees, smelters, or diggers, and from no others; and no Ore to be purchased from the leased premises of any person, without his permission.

SECOND. To commence smelting as soon as one hundred thousand pounds of Ore are obtained, and to continue it so long as any is on hand; to weigh a charge of ore for the Log Furnace, and the Lead produced from it, when required to do it by the said first party, or his assistant.

THIRD. To keep a book, containing an accurate account of all Ore, Ashes or Zane, purchased, or otherwise acquired, which book shall, at all times, be open to the inspection of the said first party, or his assistant; and to furnish a transcript or return, at the end of every month, (agreeably to a form to be furnished by said first party.) which book, and returns, to be verified on oath, if required.

FOURTH. The said second part hereby agree to pay to the said first party, for the use of the United States, the one-tenth part of all the Lead smelted by him, under this Indenture, to be paid monthly, in clean pure Lead, at the warehouse on Fever River, or at such other place, near the mines, as the said first party shall direct, and free of expense to the United States. And the said second party is not to sell, or remove from the place of smelting, in any manner whatever, any Lead, until the rent has been paid as aforesaid.

FIFTH. The said second party is to have as much fuel as will suffice for the purpose of this indenture, and to cultivate as much land as will suffice to furnish his teams, &c. with provender.

SIXTH. It is understood, and agreed between the aforesaid parties, that the second party shall not employ, in any manner, any smelter, lessee or miner, who has forfeited his license, lease or permit to mine, nor any other person who is at the mines without the authority of the said first party; and as good faith and fair dealing should prevail, the said second party agrees not to entice, or harbor, the laborers or workmen of another smelter.

SIXTY days are allowed, after the expiration of this license, to close all business under it; but it is understood that no purchase, or hauling, of Ore is to take place after the license is expired. The bond given for the faithful performance of the contract, is to be in full force and virtue, until a written settlement is made.

It is distinctly understood by the said parties, that, upon proof being afforded to the first party, that either of the foregoing stipulations have been violated, or not complied with, he may declare this Indenture null and void, and re-enter, and take possession of, all the premises, as if no such agreement existed.

WITNESSES PRESENT:

Thomas Hunt { Appointed
Nov 12 1827
J. D. Adams

H. M. Thompson [SEAL.]
Supt U.S. Mines

P. A. Sorimier [SEAL.]

FIGURE 14 - 6 One of the Twenty-Two One-Year 430-Acre "Smelting" Licenses Made by the Secretary of War in the Upper Mississippi Valley Lead Region During the Period of May 4, 1825, and February 19, 1828. (From National Archives, Record Group 156.)

acres of Area 147. Assuming the total area of permits for lead diggings in 1829 to have been more in 1829 than in 1827, when Lt. Thomas estimated their acreage at 15,000 acres and allowing for some overlapping of leased areas and of reported lead "diggings", the total area of leased or permit lands within the exterior boundaries of Area 147 in 1829, could not logically, under a most liberal estimate, have been more than one-third of the "five leagues square" or 144,000 acres reserved for selection at random for minerals by the President of the United States under Article 2 of the Treaty of August 24, 1816.³⁸

After consideration of these facts, including the fact that after ten years of exploration substantially less than 18,000 acres of actual lead area had been discovered and that 144,000 acres were reserved, it would have been logical to assume in 1829 that all subsequent lead discoveries would be the property of the United States for a future period to which no foresight could have placed a termination. In fact it would have appeared unlikely to one informed as to the Upper Mississippi Valley Lead Region in 1829 that anything close to 144,000 acres of mining sites would ever have been accumulated in Area 147 to satisfy the rights of the United States.

Immigration to Area 147 in 1828 - 29

Lt. M. Thomas, Superintendent of the Lead Mines, reported the following numbers of miners at Galena, Illinois: by September 1825, 100; by March 1825, 194; by July 1825, 406; and by the end of August 1826, 463.³⁹ In the whole region it was estimated that at the time there were nearly 1,600 miners at work.⁴⁰ During 1828 new arrivals at the Fever River mines were numerous. The "sucker" trails, from southern Illinois, were full of teams, and steamboats and keelboats were loaded with immigrants.⁴¹

Increased Occupation of Lead Region

With the sharply increased immigration to the lead region in 1828 and 1829 the district was dominated by a heterogeneous mining population of adventures, the members and movements of which fluctuated with the success of the various "diggings".⁴²

Morgan L. Martin, in passing through the country in 1828, describes these prospectors as follows:

The country was overflowing with prospectors, miners, and those who sought to pick up a living in various ways while the excitement lasted. There were fully 2,000 men in the country north of Galena and we frequently came up with little groups of two or more, trudging painfully along with their bundle slung over their shoulders, or perhaps encamped by the wayside; while to come upon a couple of rough fellows sitting on a log or stone, playing old sledge for each other's last dollar, was no uncommon experience — and — the miners were in mortal fear of the Indians, and few of them thought of permanently settling in the lead country. Their object being to get what they could from the diggings, so long as peace lasted and be prepared to leave for the Illinois settlements again on short notice.

In his journey through the country, Martin noted miners "liberally supplied with ammunition" living in a stockade, at diggings at Dodgeville and also reported two settlers at Blue Mounds, all east of Area 147. Within Area 147, at Platteville, he noted miners living in tents, and he also noted diggings at Sinsinawa Mound and Gratiot's Grove. East of Blue Mounds outside Area 147 he described as "an unexplored wilderness." Galena itself he described as a lively town with 1,000 to 1,500 people resident.⁴³

Prospecting for Lead

The permit system, which encouraged prospecting, made it possible for the United States to identify the location of mineral deposits in the lead district, but did not necessarily always benefit the individual prospector. The hordes of immigrants who came seeking the big lead often found no lead deposits, and even if they discovered one, it was usually of inferior quality. Most of the miners were poor, and laborers received only from \$15 to \$20 per month and board. Led on by his passion, however, the hopeful miner, digging in his dark crooked hole, always felt sure that he was close to the ore, or at most, that his "lucky strike" was not far off.⁴⁴ A contemporary observer described prospecting as follows:

Prospecting, the general business of the country consisted in digging "succor (sic) holes," in all imaginable shapes and depths and in all manner of places. When a lead was struck, immediately all would flock to that vicinity to mine; and hence, in a few years mining was concentrated, in some considerable degree, in certain localities . . .⁴⁵

³⁸ 7 Stat. 146.

³⁹ American State Papers, Vol. 4, p. 800.

⁴⁰ op. cit. Pooley, 1908 — The Settlement of Illinois 1830 - 50, p. 464.

Davidson, Alexander and Struve, Bernard, 1874 — History of Illinois 1673 - 1873, p. 346.

⁴¹ op. cit. History of Jo Daviess County, (Illinois) 1878 — pp. 253 - 255.

Note: Although there are at least a dozen different versions as to the origin of the term "sucker," a fish by that name ap-

peared each spring in the Galena (Fever) River.

⁴² op. cit. Schockel, 1916 — Settlement and Development of Jo Daviess County — p. 190.

⁴³ Thwaite, Reuben Gold, 1888 — Narrative of Morgan L. Martin, Wisconsin Historical Collections, Vol. XI, p. 398.

⁴⁴ op. cit. Schockel, 1916 — Settlement and Development of Jo Daviess County — pp. 190 - 191.

⁴⁵ Stewart, John W., 1857 — Early History of Green County in Wisconsin, Wisconsin State Historical Society, p. 332.

MINING ACTIVITY DURING THE 1816 - 1830 PERIOD

However, to prospect for lead in the region at the time was not to be assured of success in finding it. For each one who succeeded, many failed. However, with the optimism of the prospector, many continued in their search for the big lead. Morgan L. Martin describes one such prospector's failure as follows:

His failure, however, did not daunt him, and he stood quite ready to waste as much more money in the same way, if he could get his hands on it.⁴⁶

A contemporary newspaper editorial in 1829 summed up the precarious nature of lead mining by saying,

From the superlative accounts of some who were in that country at the time these mines first began to be extensively worked, many were induced to abandon their farms where they had long lived comfortably, though perhaps not getting rich, and press on to the mines ---. Perhaps one in 20 did as well as he might have done at home. Perhaps one in 1000 has gotten rich. The rest have travelled far, labored hard, and finally, though not all, returned home, not with heavy purses and light hearts, but the reverse. . . .⁴⁷

In 1838 J. P. Sheldon, Register of the Land Office at Mineral Point, Iowa County, Wisconsin, (within Area 147) in an official letter to the Commissioner of the General Land Office, reviewed the history of prospecting in the lead region in these words:

In the vast majority of cases, the labor expended in these attempts to discover lead was entirely lost; and there are instances where men have expended years of labor and large sums of money and have never had the good fortune to discover a valuable vein or sheet of ore.⁴⁸

Change of Conditions in 1829 within Lead Region

Under the stimulation of such intensive immigration and prospecting, the lead production of the region jumped from 959,000 pounds in 1826 to 13,344,000 pounds in 1829. Although protected by a high tariff against foreign lead imports, the market could not absorb this increased production. The result was a complete demoralization of the market for lead by 1829. (See Table 14 - C)⁴⁹

While the "quoted" price of lead at Galena, Illinois, dropped as low as \$1.50 per cwt., the actual price obtainable dropped lower. A contemporary observer, who owned a tavern in Mineral Point, (located within Area 147 in the present County of Iowa, Wisconsin) states, in part, of conditions existing there in the fall and winter of 1829:

. . . The inhabitants experienced the severest times that they ever had in the country. Lead and mineral fell from a good price to almost nothing . . . lead depreciating to one dollar to one dollar and a quarter per hundred and mineral only brought no more than four dollars per thousand, and often but three . . .⁵⁰

Table 14-C

Lead Imports and Upper Mississippi Valley and Missouri Lead Production Campored

Year	Lead Imports Bar and Sheet Pig		(Thousands of Pounds)		(Lbs. Lead 000 omitted)	
			Domestic Production		\$ per 100 lbs.	
			Upper Mississippi Valley Mines	Missouri Mines	Price of Lead	
					Galena	St. Louis
1824	2,706	4,011	175)		
1825	5,868	1,995	665	2,204	Up to \$5.00	
1826	5,849	1,818	959	3,008		
1827	7,987	2,162	5,182	3,616	4.23	4.63
1828	8,077	3,088	11,106	6,400	2.92	3.32
1829	1,640	364	13,344	4,183	1.54	1.94
1830	713	244	11,942	4,104	1.73	2.13

Source: 1. Import data are taken from Gates 1931, *The Disposal of the Public Domain in Illinois 1848-56*, p. 33.

2: The domestic production is taken from King, H., 1840, *Senate Executive Doc. 108*, 26 Congress, 2nd Session, p. 9.

3: The price at St. Louis is averaged from Bell, W. H., 1844 *Doc. 43*, 29 Congress, 1st Session, House of Representatives, War Dept., Report of Sept. 30, 1842, p. 10.

4: The price at Galena was arrived at by assigning a charge for transportation from Galena to St. Louis of 40 cents per 100 pounds.

Walter R. Kuehnle - 1958

The effect of resulting low lead prices on the miner in 1829 was disastrous. The price of lead ore dropped to a low point that made it unprofitable to work any but the richest and most productive mines within Area 147. With the price of lead at such a depressed level, there was little to compensate the miner for his labor in any marginal diggings because of the low price which could be obtained for ore. As a result lead production in the region dropped sharply in 1829.

A report of the Commissioner of the Land Office at Mineral Point, Wisconsin, dated March 23, 1838, made in response to a Senate Resolution of March 12, 1838, also mentions the low price of lead in 1829. The report stated:

. . . The amount of lead made decreased, mainly in consequence of the sufferings of the miners during that year, (1829) and a portion of 1830. The price of lead declined, while provisions of all kind were enormously dear. Many miners, who had exchanged their mineral for lead, sold the latter for \$1.00, and sometimes at less than \$1.00 per hundred, and took in exchange flour at \$20 and \$25 a barrel. Many were forced by their wants

sues of the Galena Advertiser printed within Area 147 showed as follows:

1828 — Aug. 23 — \$3.25; Aug. 30 — \$3.00; Oct. 25 — \$2.50; Nov. 15 — \$2.50.

1829 — June 3 — \$1.75 — \$2.00; July 11 — \$1.75 -- \$2.00; Oct. 12 — \$1.75.

1830 — May 24 — \$1.75 — \$2.00; June 12 — \$1.87

⁵⁰ op. cit. Stewart, — *Early History of Green County, Wisconsin*, pp. 334 - 335.

⁴⁶ op. cit. Thwaite, 1888 — *Narrative of Morgan L. Martin* — p. 398.

⁴⁷ Galena (Illinois) Advertiser, October 26, 1829 — *Experience and Prosperity of Miners*.

⁴⁸ Public Document No. 411, 2nd Session, 25th Congress, Senate, Dec. 4, 1837, Vol. V, p. 5, containing Report of J. P. Sheldon, Register of Land Office, dated March 23, 1838.

⁴⁹ Actual quotations per cwt. on "pig" taken from various is-

to leave the country while others turned their attention to agriculture; and in 1830, the returns showed a falling off of upwards of 5,000,000 pounds.⁵¹

Wages and Entrepreneurs' Rewards

1823 to 1828 may be described as the period of steady growth of production within the Upper Mississippi Valley lead mining area under a favorable tariff supported lead price. During this period of growth, great inducements and encouragements were offered to the immigrant. Laborers' wages rose to \$20 to \$25 per month. Lead brought \$4 to \$5 per 100 pounds, and smelters paid from \$16 to \$18 per 1000 pounds for unprocessed lead ore, and the resulting production exceeded domestic market demands by 1829.⁵² The contrast between the incentives of miners to produce lead before and after the resulting collapse of lead prices in 1829, as heretofore pointed out, may readily be seen by taking David Dale Owen's figures for an average day's production by two lead miners of 500 pounds of lead "raised" per day. From these figures we may compute the entrepreneur's reward for his daily work gauged by various lead prices as follows:

Price Lead Per 100 #	Lead Ore per 1000 # *	Miner's Daily Reward	
		250 # Raised	150 # Raised
\$5	\$18.00	\$4.50	\$2.70
4	16.00	4.00	2.40
3	12.00	3.00	1.80
2	8.00	2.00	1.20
1	3.50	.88	.53

* Assumed to be net to miner after 10% government rental.

Smelter Operations

The low lead prices reached in 1829 also affected the smelters. The following simple adaptation of expenses used by J. T. Hodge will serve to illustrate the effect on smelter's income at various lead price levels.

		Price of Lead Per 100 Pounds		
		\$1.00	\$3.00	\$5.00
Lead produced (from 100,000 lbs. of ore)	66,000 lbs.			
Less 10% rent	6,600			
Net lead to smelter	59,400	\$594	\$1,782	\$2,970
Smelter's Expenses				
Cost of ore				
(Per 1000 lbs.)	(\$3.50)	(\$12)	(\$18)	
Per 100,000 lbs.		350	1,200	1,800
Hauling ore 75¢ per 1000 lbs.	75	75	75	75
Wages	60	60	60	60
Wood and misc. (20 cords @ \$2)	40	40	40	40
Hauling lead 20¢ per 100 lbs.	130	130	130	130
Total expense		\$665	\$1,505	\$2,105
Balance to smelter		(Loss)	\$ 297	\$ 885

NOTE: To simplify this table, the same expenses have been used throughout although expense items would probably be a little lower in the poorest and higher in the best times. This statement would represent about ten days' operations. This table assumes ore price net to miner with smelter paying the 10% government rent.⁵⁴

The Effect of The Slump in The Price of Lead

The effect of the slump in the price of lead in 1829 on the economy of the lead district was disastrous. The period of growth of population and production from 1823 to 1829 was followed by one of immediate decline and uncertainty.⁵⁵ In consequence of the resulting business depression of the times created by the catastrophic drop in the price of lead in 1829, people became discouraged and left the region. Many others gave up their business. The lead region during the fall and winter of 1829, 1830 and 1831 presented a most gloomy and unpromising appearance from an economic viewpoint.⁵⁶

These conditions were discussed in editorials and permeated the news items of the Galena (Illinois) newspapers of the period. For example, the issue of Galena Advertiser for September 25, 1829, contained the following announcement signed by Thomas C. Leggett (Legate), Captain of Artillery, and newly appointed Superintendent of the Lead Mines:⁵⁷

⁵¹ Report of Sheldon, J.P., — Register of the Land Office at Mineral Point, Wisconsin, dated March 23, 1838 — Report to General Land Office, as found in Public Documents, Senate 411, 2nd Session, 25th Cong., Dec. 4, 1837, p. 4.

See Report of Lead Production in Upper Mississippi Valley Mines 1823 - 35. Figure 14 - 8.

⁵² Galena Advertiser, July 20, 1829 — p. 3, column 1 — Galena As It Is.

⁵³ op. cit. Owen, 1844 — Report of a Geological Exploration of Part of Iowa, Wisconsin, and Illinois, p. 45. David Dale Owen, quoting contemporary opinion, states that "Two men can raise something near 500 pounds per day, from veins of

average thickness." He, however, quoted a "safe" estimate of a miner's average daily work at 150 pounds per day.

⁵⁴ op. cit. Hodge, 1842 — On the Wisconsin and Missouri Lead Report, Vol. 43, pp. 35 - 72.

⁵⁵ Peterson, Wm. J., 1937 — Steamboating on the Mississippi, The Waterway to Iowa — Iowa City — The State Historical Society of Iowa, p. 207.

⁵⁶ op. cit. Stewart, 1857 — Early History of Green County, pp. 334 - 335.

⁵⁷ Replaced Lt. M. Thomas as Superintendent of Mines on April 23, 1829.

In consequence of the difficulties attending the working of leads during the winter season, it is thought proper to suspend that part of the regulations requiring lead to be wrought five days in seven — notice is hereby given that a suspension of work on all lots where actual discoveries have been made take place from the first of November next until the 20th of April, 1830.

Protests were made against the 10 per cent share of lead mined, being charged as rental by the United States Government under the existing conditions. In the Galena Advertiser of November 2, 1829, the following editorial comment appeared:

That the Government should receive one-tenth of all lead manufactured at the mines has always been considered rather burdensome to the miner; but at the present reduced prices of that article, it has become almost unsupportable. Thousands have consequently left the mines to remain until lead shall command a higher price or the tax on it reduced proportionately low.

The Galena Advertiser in the issue of August 31, 1829, again commented on the hard times resulting from the slump in lead prices, as set forth in Figure 14 - 7. However, news of the slump in the lead prices carried far beyond the bounds of the region. On August 2, 1829, the National Intelligencer of Washington, D.C., carried a second account copied from a western newspaper in regard to the business depression within the lead region of the Upper Mississippi Valley, as follows:

This country, and the business of this place, is completely prostrated by the great, sudden and unexpected fall of lead. It now sells at $1\frac{1}{2}$ to $1\frac{3}{4}$ cents per pound. Galena is almost deserted. (sic). The still waters of Fever River are at present but seldom disturbed by the craft of commerce. A complete revolution has taken place but many are obliged to stay in hopes of better times.⁵⁸

Rents Lowered on Manufactured Lead in 1830

Finally, in January 1830, the economic pressure resulting from the low price of lead obliged the Secretary of War to yield to the insistent demands for a lower rental. Accordingly, in 1830, he instructed the Superintendent of Lead Mines to lower the rent from 10 per cent of lead manufactured to an average of $5\frac{1}{2}$ per cent, to be regulated according to the distance between the places of origin and delivery of the lead ores.⁵⁹

GALENA ADVERTISER

MONDAY, AUGUST 31, 1829.

HARD TIMES AND WORSE COMING.—As hard as the times are in this country, and lead worth only \$1 50 per hundred pounds, there appears to be a general and simultaneous effort made to collect old debts; and many are astonished to find the matter so difficult, when the true state of things is, that there is not at this time more than ten per cent. of money in this country to pay the debts of the mines; and under these circumstances, how can we wonder that men cannot collect them? The course pursued here at present is, to bring suits, obtain judgements and executions, levy on the poor miner's house, improvements, and the few little articles of furniture, and sell them at a sheriff's or constable's sale; and all that is gained is, that one man has saved his debt of twenty dollars, perhaps, by sacrificing the means of living for a whole family—rendered the debtor unable to pay any of his other debts, and compelled him to leave the country under the stigma of running away, leaving his debts unpaid, or remain without a house, a home, or any means of support—a great satisfaction for twenty dollars. We cannot conceive how it is, that hard times should so effect a depravity of heart as to induce man to fall upon man, and render him and his fa-

FIGURE 14 - 7 The Galena Advertiser Issue of August 31, 1829, Galena, Commented Upon the Hard Times Resulting From the Slump in Lead Prices.

⁵⁸ National Intelligencer of August 2, 1829, quoting Shawneetown Gazette of June 30, 1829.

⁵⁹ Letter, January 15, 1830, Col. George Bomford to Capt. Thomas C. Legate, Superintendent of Lead Mines at Galena, contained the following table of lowered rentals to be charged lead miners on each 100 lbs. of lead. (From Record Group 156, National Archives.)

Distance from the location where made to the place of delivery	Amount of Lead Required as Rent (Per 100 lbs.)
Less than five miles	6 pounds
From 5 to 15, inclusive	$5\frac{3}{4}$ pounds
From 15 to 25, inclusive	$5\frac{1}{2}$ pounds
From 25 to 40, inclusive	$5\frac{1}{4}$ pounds

(Continued on next page)

Notwithstanding these 1830 concessions in lowered rentals for miners and smelters, objections to their payments increased. The character of the mines, their scattered locations, the difficulty of their supervision and the frontier conditions prevailing in the lead region, each contributed to the difficulty of collecting lead rentals. Table 14 - C discloses the estimated gross production of lead in the Fever River mines of the Upper Mississippi Valley, as compared with the lower production reported by lessees and licensees on which the government actually received rentals as shown in Figure 14 - 8.⁶⁰ A comparison of these tables shows the estimated actual production for 1830 to have been 11,942,000 pounds, while the actual lead production for that year was reported at only 8,323,998 pounds. This document also shows 504,214 pounds of lead paid to the United States in 1830 as rentals for the mines of this area. On this basis only about 4.2% government rentals were collected on the estimated actual 1830 lead production in the Upper Mississippi lead mines. On the basis of the amount of production actually reported in 1830, only about 6.05% was collected as rentals. Thereafter the percentage of estimated actual production reported to the government became lower and lower. Rents became increasingly difficult to collect, payments fell more and more in arrears, and in later years, the value of the rent received by the United States from the lead mines did not equal the cost of their administration. As shown in Figure 14-9, the costs of administration of the lead mines for the year 1830 were listed at \$9,223.55. At the current price of \$1.73 per 100 pounds of lead in Galena in 1830, as shown in Table 14 - C, the value of 504,214 pounds of lead paid to the government that year as rentals would have been only \$8,722.90, or \$500.65 less than administrative costs for the mines.

Hindsight

In his annual message of December 2, 1845, President James K. Polk reported that the rents received by the government from its lead lands for the years of 1841, 1842, 1843 and 1844 aggregated only the sum of \$6,354.74, while the expenses of their administration and management cost the United States the sum of \$26,111.11. He recommended their immediate sale as other public lands.⁶¹

Pressure from the West, and general recognition by members of Congress that the leasing system everywhere within the United States was a failure, led to the passage of the Act of July 11, 1846, 9 Stat. 37, which provided for the abandonment of the old lead leasing and rental systems, and for the sale of reserved lead mines and contiguous lands in Illinois, Arkansas, Wisconsin and Iowa at a \$2.50 per acre minimum price. In 1850 the Commissioner of the General Land Office said of the leasing system:

Thus it is seen that the whole of the leasing system, the reservations of the mineral lands on account of their exposed value, after the experience of nearly fifty years, have been finally abolished in some of the richest mineral regions on earth; . . . and that so far as exhibits have been made, it is shown to have been a loss to the government directly to a considerable sum, and indirectly to a vastly greater amount.⁶²

The provisions of the Act of July 11, 1846, required that the mineral lands of Wisconsin, Illinois and Iowa be brought into the market and offered for sale at public auction at a minimum of \$2.50 per acre, being double the statutory minimum price for non-mineral lands. They were not to be open to preemption entry as other public lands, and for a period of twelve months from the date of the auction were to be held at the double minimum price of \$2.50 per acre. Thereafter they would be available for preemption at \$1.25 an acre as other public lands. Though sales of mineral lands increased when the lands first came into the market under this Act, there was no concerted or general effort to bid for them, and the average price of all the lands sold in 1847 was only \$1.27 an acre at Mineral Point, Iowa County, Wisconsin (within Area 147). The following year the sales at Mineral Point averaged just \$1.25 an acre. Similarly, the sales of mineral lands in northwestern Illinois at the Dixon (Lee County, Illinois) Land Office averaged only the minimum price. In 1847 the government succeeded in selling a total of only 5,221.84 acres of lead bearing lands located in Iowa, Wisconsin and Illinois at the double minimum price of \$2.50 per acre, out of a total offered acreage of 660,669.75 acres, or about .08 of 1% of those offered for sale.⁶³

Competitive Domestic and World Production of Lead

The principal areas of competition with the lead production of Area 147, either existing in 1829 or those

(Continued from preceding page)

Capt. Thomas C. Legate was at the same time further instructed as to the possibility of further lowered rentals, as follows:

The allowances here stated, will be modified hereafter if found necessary, in order to make them correspond more equally with the expenses of transportation.

⁶⁰ American State Papers — Military Affairs — Vol. 5 (614,) p. 728; also, from Record Group 156, National Archives.

⁶¹ op. cit. Schafer, 1932 — The Wisconsin Lead Region, p. 107.

⁶² Commissioner, General Land Office, Annual Report, 1850, p. 19. The commissioner further reported that the whole amount of lead rent received in 1841 and 1842 was only 74,924 pounds, worth about \$1,600 — a sum which barely covered the annual salary of a mining superintendent.

⁶³ Commissioner, General Land Office, Annual Report, 1847, pp. 19 - 20. During the same year, 112,769 acres of lead lands in Arkansas were offered for sale, with none sold.

135.

Statement of the quantity of Lead made, and the quantity received for rents, at the United States Mines, as shown by the Tabular Statement accompanying the Annual Reports of the Ordnance Dep^t. and printed with the State Papers and Executive Documents from year to year -

Period.	Source from which the information is obtained -	Missouri mines Potasi.		Upper Mississippi Mines St. Louis River.	
		Made.	Received	Made	Received
From 1821. to					
30 September 1823	Quantity made taken from statement in Vol. 1 State papers 1. Sep. 20 Com. That rec ^d in 1824. Vol. 1. War Dep ^t . Book 4. page 58. & that received in 1825. from State Papers Vol. 1. 1. Sep. 19 Com.	-	-	335,130	-
" do 1824		-	-	175,220	17,222
" do 1825		386,590	38,259	664,530	65,854
" do 1826	State Papers 1 Vol. 2 Sep. 19 Com	1,374,962	112,560	958,342	95,880
" do 1827	do 1 " 1 " 20 "	910,380	44,467	5,182,180	518,218
" do 1828	do 1 " 2 " 20 "	1,205,920	193,899	11,105,510	1,110,585
" do 1829	do 1 " 1 " 21 "	1,198,160	119,816	13,343,150	1,268,366
" do 1830	Executive Doc. 1 " 2 " 21 "	8,060	566	8,323,998	504,214
" do 1831	do 1 " 1 " 22 "	67,180	3,359	6,381,900	271,627
" do 1832	do 1 " 2 " 22 "	-	-	4,231,576	155,451
" do 1833	do 1 " 1 " 23 "	-	-	7,941,792	393,734
" do 1834	do 1 " 2 " 23 "	-	-	7,971,579	335,084
" do 1835	do 1 " 1 " 24 "	-	-	3,754,290	45,074
Total		5,151,252	512,926	70,420,357	4,781,309

Table on page 366 Ex Doc Vol. 1. 2^d. 24th G. shows the amt. of Lead made to have been the same as is shown in the several statements above referred to. It states, as above also the Annual Report itself on page 328 of that Volume, that the total of Lead made which accrued in the above time was 5,909,216 lbs. and the amount due to have been 498,313 lbs. while if that amount accrued, it would appear by the above total there remained 614,987 lbs. due. The statement which accompanied (Dr. Briggs' reports) on from War Dep^t. Book 11. N 34. makes amt. due for Upper Mississippi Mines 529,768 lbs. and it appears by the statement on page 135. of this volume that there remained due on the Mississippi 3,754,290 lbs. which makes the total due 588,511 lbs. -

FIGURE 14-8 Reported Lead Production and Lead Rent Received by Government During 1823-1835. (From Group 156, National Archives.)

139.

The accounts paid for Superintendence of these mines are so blended till the year 1831. that it cannot be ascertained precisely what portion of them should be charged to the Missouri and what portion to the Mississippi mines.

<p>It appears by a report from the second Auditor (Doc. 169, 1st Session 20th Congress) that up to 31 December 1827. there had been paid at the Upper Mississippi & Missouri Mines, this amount - - - - -</p>		9,175	60
Expended 2. this Office	Sicut Thomas expended in 1828. - - - - -	6,321	10
"	1829. do \$2,871.10. & Major Legate \$3,656.23. -	6,527	33
"	1830. F. Wheelwright 792.35 do 8431.20 -	9,223	55
"	1831. do 1,134.75 do 4,860.98 -	5,995	73
"	1832 do. Wheelwright 1,067.00 & Spee 370.00 Major Legate 2,606.00 -	4,044	39
"	1833. Major Legate - - - - -	4,784	87
"	1834. do - - - - -	4,719	69
"	1835. do - - - - -	4,759	35
Total		55,551	61
<p>Letter to Wm. Cap. } This sum paid by Genl. Maclellan to B. Mills for Book 6. page 269 } defending in suits against Major Legate - -</p>		1,500	.
<p>within a fraction of 11 Mills p. lb on quantity of lead received</p>		57,051	61

FIGURE 14-9 Official Record of U.S. Ordinance Department Showing the Amounts Paid as the Expenses by the Superintendent in the Upper Mississippi Lead Mines 1829-35. (From Record Group 156, National Archives.)

from which it might have been reasonably anticipated thereafter, were the following regions: (1) the Missouri mines; (2) that part of the Upper Mississippi Valley District east of Area 147 in Wisconsin and Illinois; (3) that part of the Upper Mississippi Valley Lead District lying west of Area 147 in Iowa; and (4) the possible or speculative future discoveries of lead producing regions in other parts of the United States. Of these competitive areas the first three were in existence with established production records as of 1829, and could thereafter be expected to produce considerable lead. The fourth area mentioned was competitive in 1829 with Area 147 only in a speculative sense, and might well have been eliminated from consideration altogether. Even with the full impact of the competition of the second and third areas of lead production not yet realized, domestic production of lead between 1826 and 1829, because of high protective tariff stimulation, increased by leaps and bounds. The production potentialities of the Iowa lead producing area were apparently general knowledge. In this regard, J. D. Whitney in 1830⁶⁴ reported that

The region was opened to the whites, who immediately crossed over and commenced exploring and mining. However, they were driven off because the land had not yet been purchased from the Indians, but in 1833 permission was given to take possession of the much-coveted region.⁶⁵

Undoubtedly, the fact that the lead lands on the west side of the Mississippi River were still encumbered with the Indian title until 1832 contributed in some measure to the increased development of lead mining within Area 147 prior to that time.⁶⁶

In addition to the lead production from the Upper Mississippi Valley and Missouri Districts, some other small production had come, according to J. D. Whitney, from several eastern states.⁶⁷ There was a slight possibility of additional lead production from this source in the future, and indeed some production was recorded from these states after 1829. In 1829, however, the danger of competitive lead production from this quarter was of a minor nature.⁶⁸

Southern Illinois was another region from which lead production would have been anticipated in 1829. Of this area, David Dale Owen reported that, "This lead ore has been explored to some extent, but the quantity hitherto obtained has not proved sufficient to render mining in this vicinity profitable. Many have been induced to work this lead ore. . . ."⁶⁹

In 1856 Owen further commented,

It is important to observe, in calculating the practicability of working the lead ores existing in these limestones, that they occur in the same geological position as the most productive lead-bearing limestones in the north of England. . . . These lead veins have, as yet, never been followed in Kentucky to a sufficient depth to prove their productiveness. . . .⁷⁰

A. Winslow said that, "In Southern Illinois the Massac and Hardin County deposits were opened before 1821."⁷¹ H. F. Bain described these deposits and pointed out that,

The galena which occurs associated with the fluorite was probably noticed very early in the nineteenth century. . . . The first important mining venture seems to have been that of a company headed by President Andrew Jackson . . . in 1835.⁷²

The Effect of the Protective Tariff on Lead Prices

Up to 1829 the tonnage of world production of lead had likewise been increasing. (Table 14 - D.) Until then the United States tariff on lead had been able to support the market for the rapidly increasing discovery and manufacture of domestic lead against the increasing world production, the importation of which had threatened lower prices for lead from foreign countries. Under date of April 10, 1829, at a time more than three months before the Treaty of July 29, 1829, Col. George Bomford of the Ordnance Department of the War Department, then in charge of the lead mines of Illinois and Wisconsin, wrote to Rev. William Kinney of Galena on the subject of the effect of the existing Protective Tariff on the price of lead which, in part, reads as follows:

The duty on foreign lead at present prices is about

⁶⁴ op. cit. Whitney, 1858 — Lead, in Report on the Geological Survey of the State of Iowa, vol. 1, pt. 1 — p. 468.

⁶⁵ Ibid. Whitney, p. 425. The Indian title to lands across the river from Area 147 was extinguished by the Treaty of September 21, 1832, 7 Stat. 374, with the Sauk and Fox Indians. This tract was Royce Area 175, Iowa 1.

⁶⁶ op. cit. Thwaites — Notes on Early Lead Mining in the Fever River (Galena) Region — p. 291. The claim of the Sauk and Fox Indians to Area 175, Iowa 1, was extinguished by the Treaty of September 21, 1832, 7 Stat. 374.

⁶⁷ op. cit. Whitney, 1854 — The Metallic Wealth of the United States — pp. 382 - 403.

⁶⁸ Ibid. Whitney, 1854.

⁶⁹ Owen, David Dale, 1846 — On the Geology of the Western States of North America, Quarterly Journal Geological Society, London, vol. 2, p. 438. Read Nov. 2, 1842.

⁷⁰ Owen, David Dale, 1856 — Report of the Geological Survey in Kentucky, Made During the Years 1854 and 1855 — pp 87 - 88.

⁷¹ Winslow, A., 1894 — Lead and Zinc Deposits. Missouri Geological Survey, vol. 6 — p. 12.

⁷² Bain, H. F. 1905 — The Fluorspar Deposits of Southern Illinois, United States Geological Survey Bulletin 255,—p. 12.

APPRAISAL OF ROYCE AREAS 147 AND 148

200% on the value of the article, while 10% only is paid by the miners, being a difference of 20 to 1 in favor of our citizens.⁷³

In 1824 the United States doubled the tariff on lead in pig bars and lead shot. Lt. M. Thomas, Superintendent of Mines, reported to Col. George Bomford in January 1826, that without the tariff, Missouri lead could not compete with foreign lead then being imported. Before the new 1824 tariff, lead was selling at 4 cents per pound in Missouri. In 1826, as a result of this tariff, the price had risen to 6 $\frac{1}{4}$ cents per pound.⁷⁴ The supporting effect of this lead

lead in the United States against the rapidly rising world and domestic production, and in 1828 approximately 15,000,000 pounds of domestic lead were produced. It was also stated at the time that an additional 12,000,000 pounds were imported in various forms.⁷⁶

As of 1829 increasing world production of lead was adversely affecting the world price to such an extent that the price of lead in England was approximately \$3.25 per 100 pounds. Lead had been sold in that country as high as \$8.88 per 100 pounds. The English miners were described as wretchedly oppressed and miserably poor.⁷⁷ In 1828 the United States tariff on lead pigs, bars and shot was raised an additional 50% in an effort to support the domestic price of lead against low world prices.⁷⁸ The result was a cut in domestic imports in 1829 of 80%. Nevertheless the rapidly mounting domestic production glutted the limited home market of that period, and as a consequence lead prices fell to the lowest point in history. (Table 14 - C.) In the years immediately following 1829, lead production in the Upper Mississippi Valley fell and, notwithstanding the subsequent inclusion of a greater portion of the lead region into the thus enlarged producing area, it was several years before lead production recovered to its 1829 peak. The result was that the value of the ore deposits actually known to have existed upon the reserved lead lands of the United States within Area 147 was being propped up and artificially maintained by this tariff for the benefit of the miners during this period.

Two significant points emerge from these facts. The first is that the bottom had dropped out of the lead market in 1829, and the second is that any hope for recovery was then based on domestic demand with a continued tariff sufficiently high to either restrict or bar altogether imports of the foreign product. On January 19, 1832, Captain Thomas C. Legate, the Superintendent of Lead Mines at Galena, Illinois, reported to Col. George Bomford as follows:

Should the timber land be reserved for the use of the mines, the other lands would be of no value. Again, should the whole be offered for sale while the present high tariff is laid on foreign lead, it would give a fictitious value to the lands or impose on the Government a perpetual obligation to continue the tariff. On the other hand, should the tariff on foreign lead be repealed, the mines would be abandoned, and the country

Table 14-D

Domestic and World Production of Lead

Year	Short Tons		
	(1) Annual Av. World Production	(2) U.S. Smelter Production	(3) Total Production Fever River & Missouri
1821)	74,149	1,900	
1822)		1,900	
1823)		2,068	168
1824)		1,987	88
1825)		2,232	1434
1826)	106,083	2,379	1984
1827)		4,490	4399
1828)		7,452	8753
1829)		8,571	8764
1830)		8,000	8023

Source

(1) and (2) From Lewis A. Smith, 1929, Summarized Data of Lead Production - Economic Paper 5 - Bureau of Mines, U.S. Dept. of Commerce

(3) Bell, W. H., 1844. Doc. 43, 29th Congress, 1st Session, House of Representatives, War Dept. Report of Sept. 30, 1842, P. 10, and divided by 200 lbs.

NOTE: In 1828 England and Ireland produced 98,700,000 lbs. (Schockel p. 188).

tariff on the price of lead prior to the 1829 price collapse was summarized in 1824 in a St. Louis, Missouri paper as follows:

The price of lead has risen in the Atlantic States to about 8 cents a pound and to 6 in this place. . . . At the same time this price may be considered as permanent because it is the effect of the new tariff and of home demand and not the result of any accidental causes in Europe. Under the duties imposed by the new tariff, foreign lead cannot be sold in the United States for less than about 8 cents and the home market, including the manufacturers of shots and paints, consume from 12 to 14 millions per annum, double the quantity that we now produce, and the consumption is constantly increasing with the augmenting wealth and population of the country.⁷⁵

However, the prognostications of 1824 could not be maintained in the face of the existing demand for

⁷³ Galena Advertiser — November 9, 1829, Letter, BVt., Col. George Bomford to Rev. William Kinney, April 22, 1829.

⁷⁴ Sen. Doc., 19th Cong., Sess. 1, Serial 126, Doc. 45, p. 18.

⁷⁵ Quoted in Niles Weekly Register, Franklin Press, Baltimore, issue of September 10, 1825, Vol. 29, pp. 21 - 22.

⁷⁶ United States Department of Commerce, 1949 — Historical Statistics of the United States, 1789 - 1945, p. 151.

Galena Advertiser, November 2, 1829.

⁷⁷ Niles Register, December 5, 1829, p. 228.

⁷⁸ NOTE: Some lead ore, free from duty, was shipped to the United States as ballast in 1829, but this loophole was immediately closed by the United States Customs. Niles Register, October 24, 1829, p. 131.

MINING ACTIVITY DURING THE 1816 - 1830 PERIOD

would be dependent upon foreign supplies of the article.⁷⁹

Accordingly, in 1829 there was little prospect in the foreseeable future for an export market for surplus domestic lead production. Only a limited domestic market protected by an abnormally high tariff was in prospect for the domestic production in Area 147.

Summary

As early as 1816 efforts were made by the Commissioner of the United States Land Office to lease 320 acre mineral (lead) sites in the part of Area 147, in the Upper Mississippi Valley Lead Region. Due to lack of success in securing leases, leasing was turned over to the Ordnance Department of the United States Army who advertised for lessees for 320 acre tracts in 1822. Eighty applications were received but these were mostly attempts to speculate and did not result in mineral claims being chosen. Licenses were also granted for lead smelters. Bonds were required in both lead mine and smelter leases. Between 1825 and March 1829 only 38 such bonded leases for mines and 22 licenses for smelters were granted by the United States.

By 1825 it was apparent that the erratic character of lead deposits in Area 147, in size, location, and distribution, made a 320 acre mineral lease site impractical. Existing lead diggings appear to have varied in area from as low as 0.5% to 40% of the sections in which they were located.

Commencing in the year of 1825, permits were granted to miners for sites 300 yards square, and in 1827 this regulation was changed reducing sites to 200 yards square (approximately eight acres). In all cases rental was 10% of the manufactured lead produced. No bond was required, the miners operating on a system of permits and claim filing. Under this system the area was scoured by miners searching for the big lead and, although only some of the prospectors were successful in locating lead deposits, the intensive exploration resulted in the principal locations of lead deposits in Area 147 being discovered by 1829.

Estimates in 1827 by the army agent in charge of the superintendence of the lead lands, in the Upper Mississippi Valley Lead Region, placed the estimated area of mining permits and leases at 20,000 acres. Total bonded leases including smelter leases of 320 acre tracts in 1829 totaled approximately 20,000 acres. As the total of all mine diggings in Area 147, both before and after 1829, covered an area of only 18,325 acres, as shown in Chapter 13, it is reasonable to as-

sume that a survey at the time would have revealed that they could not have exceeded this amount in 1829. Accordingly, 40,000 acres is a most liberal estimate of the total area which an informed person in 1829 would have assumed had already been claimed by the United States out of its mineral (lead) reservations of 144,000 acres.

Before 1829 United States lead production was absorbed in the United States and the price protected by a favorable tariff. The rapidly increasing production of 1827 to 1829 resulted in over - production and complete demoralization of lead prices in 1829. At this same time additional areas of the Upper Mississippi Valley, in Wisconsin and Iowa, were about to come into production. Mining activity dropped and there was a period of general hardship in the mining area during this year.

The highest number of pounds of lead ever collected, in any year, in the entire Mississippi Valley as rental was 1,268,000 pounds, which, at the going price of one cent per pound in 1829, would have amounted to a gross rental of \$12,680, or, at an average price per pound of 3½ cents, to a gross rental of to \$44,380 per annum. The government's costs of operating these mines were exceeding rental revenues notwithstanding which it was already experiencing the start of a period of increasing difficulty in collecting rentals and was to cut them from 10% to 5¼% - 6% (1830) of lead produced which, of course, would almost cut these gross rental figures in half. It was to eventually conclude that the operation and leasing of these mines was not a profitable project.

However, irrespective of these adverse conditions affecting lead mining at the time, before acquiring Area 147, a prospective purchaser in 1829 would have first acquired a knowledge of the limitation of the areas of lead deposits to certain combinations of geology, topography and location, and that the lead region of Area 147 had already been intensively prospected. Accordingly, on the facts as outlined in Chapters 12, 13 and 14, it is unlikely that a prospective purchaser would have ascribed any value to mineral rights, based on mineral (lead) rights, at such indefinite and unlikely future time when a total of 144,000 acres of mining claims would have been discovered, turned over to the United States, and he, as remainder-man, would then succeed to the remaining discoveries thereafter. Such a remote and contingent mineral right could not have induced a prospective 1829 buyer to pay anything above the value of the lands based on their potential for resale as agricultural sites to settlers.

⁷⁹ Sen. Doc. 25 Cong., 2nd Sess., Serial-315, Doc. 131, p. 2; also Letter, April 6, 1829, Col. George Bomford Bt. Co. on Ordnance Service to Hon. J. H. Eaton, Secretary of War. This

letter also discusses the proposed reduction in rents and permits, but states that duty on imported lead would have exceeded rents collected for the lead lands.

V. VALUE CONCLUSIONS

Chapter 15

VALUE CONCLUSIONS

The value of the subject areas in July 1829 is estimated as the purchase price at which a fully informed buyer and a fully informed seller would have agreed, neither party acting under compulsion. The most probable motive of a prospective purchaser of these lands in 1829 would have been either speculation or the possibilities of future development and resale of the lands to settlers at a profit, in competition with public lands. The preceding chapters contain a study of conditions in 1829 concerning the character of the subject areas, the character of the United States and Illinois as then constituted, contemporary economic conditions, the then existing supply and demand for land, contemporary settler preferences as to land types, transportation, agriculture, lead deposits and mining in the Upper Mississippi Valley, and both public and private sales of land in Illinois which had been negotiated up to that time. As the attitudes of individual land purchasers and economic conditions then prevailing differed radically from those existing today, a fair and reasonable estimate of the 1829 value of the subject Areas 147 and 148 must come through study of such historical facts. Among specific facts included in this volume as influencing the value of these lands in 1829, and studied in arriving at this appraiser's estimate of value as shown herein, are the following:

1. Sales of large tracts of land.
2. 1829 contemporary opinions as to land values.
3. Influence of impending offerings of Illinois Canal strip lands on the value of the subject areas.
4. 1829 private land sales in Illinois Military (Bounty) Tract.
5. Probable extent of lead deposits not reserved by the United States in Area 147.
6. Purchase price of the subject areas that could have been justified by their resale potential.

Summary facts and indicated value conclusions in each of these categories are as follows:

Value Indicated by Sales of Large Tracts of Land

No large tracts of public lands had been sold by the United States between 1795 and 1829. As heretofor

recounted, prior to 1795 (1787 - 1795) several large tracts containing from 1,000,000 to 3,000,000 acres were sold in New York, Ohio and Western Pennsylvania, by both the government and private individuals, at from 5 to 40 cents per acre (Chapter 7).¹ While these sales were too remote in time and locality to constitute substantial evidence of 1829 values of Illinois lands, yet they constituted large land purchases within the United States, and likely would have had a limiting influence on opinions of contemporary land values by prospective purchasers in 1829.

Value Indicated by Contemporary Opinions

Due to the vast amounts of surveyed but unsold public land existing in 1828 in Illinois and elsewhere, the Senate of the United States passed a Resolution requiring the registrars and receivers of all United States Land Offices to report the quantity and quality of all land remaining unsold in their respective districts and its (retail) value. Estimates of the retail value of the land were made by classes of unsold public lands by four of the six existing Illinois land offices in 1828 as follows: First rate land (combination timber and prairie), \$1.00 to \$1.25 per acre; second rate land (combination timber - prairie), 50 cents to \$1.00 per acre; prairie land, 0 to 12½ cents per acre (Table 7-B).² As to the latter class, the official report of the Vandalia Land Office stated that prairie land lying remote from timber "will not sell nor would it be accepted in donation on condition of actual settlement" (Chapter 6).³ On the basis of these reports a prospective purchaser in 1829 could reasonably have projected possible retail resale prices of the subject areas at a rate commensurate with the known estimated demand in Illinois as follows: (1) For the sections containing timber, a retail resale price of 50 cents an acre for the less desirable areas and up to \$1.25 per acre for the more desirable lands in Class 1 sections might have been anticipated. In view of the actual contemporary reports of the Illinois land offices, it would have been reasonable to assume in 1829 that there was no foreseeable demand for the vast non-timbered prairie sections contained within the subject areas. To have concluded otherwise

¹ pp. 69 - 70.

² Chapter 7, p. 73.

³ p. 65.

would have been wholly unrealistic. (2) From this information an informed purchaser would also have concluded that the maximum prices he would have been warranted in paying for the subject areas would range between 30 and 40 cents per acre for land in timbered sections, and nothing for the prairie acres.

Influence of Offerings of Canal Lands on Value

An informed person would have known in 1829 of the plans of the Canal Trustees to sell the lands in the alternate sections given in 1827 to the State of Illinois by the United States to aid in the construction of the Illinois - Michigan Canal. Actually advertised for sale on January 25, 1830 — (See Figure 9-2.)⁴ These lands contained the principal proposed town sites in northern Illinois, including Chicago and Ottawa, along the proposed Illinois - Michigan Canal and were more desirable location-wise than Areas 147, 148A and 148B which were largely remote wilderness lands without settlement, except for the town of Galena and the mining camps in the lead region of Area 147. Together with public lands comprising the balance of the canal strip reserved to the United States from the original grant,⁵ these lands comprised a vast area adjacent to the subject properties which would offer strong competition in reselling land in Areas 147 and 148 to settlers. An informed purchaser, in 1829, would certainly have considered that some time must elapse before threatened Indian troubles might have subsided in Illinois and sufficient settler demand could have accumulated to make the subject lands marketable. He would have discounted substantially the price he would have paid for the subject Areas 147, 148A and 148B as units, in order to cover the interest on his investment, and other expenses, during the holding period until he could dispose of them.

Value Indicated by 1829 Military Tract Sales

Tracts ranging in size from 1,280 to 3,360 acres were sold in the Illinois Military (Bounty) Tract by private individuals in 1829 at an average price of 36 cents per acre, or at an average price of 52 cents per acre, if no sale value is ascribed to the lands, included in the sales, located in non-timbered sections (Figure 10 - 1 and Table 10 - D).⁶ Tracts smaller than one section in size (160 - 480 acres), in timbered sections, were sold in 1829 in this tract by private individuals at an average price of 67 cents per acre (Table 10-E).⁷

These transactions were well known at the time.

Considering these sales, 35 cents per acre would appear to have been the maximum total market value for the lands in sections containing timber, in Areas 147, 148A and 148B, with only a nominal sum to be assigned to the remaining non-timbered prairie acreage.

Probable Extent of Unreserved Mineral Deposits

Although a substantial portion of Area 147 was located in the Upper Mississippi Lead Region, the United States, when it retroceded Area 147 to the Indians under the Treaty of August 24, 1816,⁸ reserved an interest in these prospective lead lands to the extent of 144,000 acres to be selected in such tracts by the President of the United States as he might think proper. Lead in this region was grouped in districts in erratic distribution with vast barren areas between. Up to July 29, 1829, the total area selected by the government by the granting of approved leases, by an 1829 act of Congress in providing a townsite for the Town of Galena, and by ten-acre mining tracts through issuance of permits to miners, is liberally estimated at less than 40,000 acres, leaving over 100,000 additional acres still to be selected by the United States under Article 2 of the Treaty of August 24, 1816 before any lead lands would inure to the benefit of the land owner within Area 147. Although, as a result of intensive prospecting in the years prior to 1829, the principal lead districts had already been discovered, it appears the total probable area of lead deposits, mines and diggings within Area 147 was less than 18,000 acres of superficial area in 1829. Under these circumstances, the prospects of the land owner sharing in the lead discoveries in excess of those of the United States in this area were so remote and improbable that they would have been accorded no value by an informed person in 1829. Accordingly, a prospective buyer or seller of Area 147, in 1829, would have limited his calculations of a fair market price for this subject property to its then highest and best use, viz., for agricultural purposes by settlers.

Estimated Rate of Retail Resale

As shown in Chapter 11, the rates of resale to settlers at retail that might have been projected by a prospective purchaser of Areas 147, 148A and 148B, as compared with actual historical rates of sale of public land to settlers between 1823 and 1829, were as follows:

⁴ Chapter 9, p. 104.

⁵ Area 78.

⁶ Chapter 10, p. 112 and p. 119.

⁷ Chapter 10, p. 120.

⁸ Article 2, Treaty of August 24, 1816, 7 Stat. 146.

VALUE CONCLUSIONS

	LANDS IN			
	Class 1	Class 2	Class 3	Average
	Sections	Sections	Sections	
Actual annual rate of sale of Government lands in Springfield Land Office 1823 - 29*	5.8%	2.0%	0.2%	1.8%
Assumed annual rate of sale—Area 148A	12.0	3.0	1.0	3.4
Assumed annual rate of sale—Area 148B	12.0	3.0	0.5	2.2
Assumed annual rate of sale—Area 147	8.0	2.5	1.0	3.2
*Total lands offered — total lands sold				
7 years				
(See Table 11 - D Chapter 11.)				

Justified Retail Value

In review, the great amount of available land in Class 1 and Class 2 sections in 1829 indicated that the minimum government price of \$1.25 per acre was above the equilibrium price (one calculated to clear the market of land). No prudent purchaser in 1829 would have considered reselling the subject area at a price higher than the competitive adjacent United States Government (and Illinois Canal) lands to be offered at the minimum price of \$1.25 per acre. Furthermore, such a prospective purchaser in 1829 would not have considered the land of Areas 147, 148A and 148B in non - timbered sections salable as a class. Limited exceptions would be such land with special features of location or contiguity to Class 1 and Class 2 sections, which are reflected in the above projected sale rates.

Accordingly, the maximum resale or disposal price to settlers in small tracts, which a prospective 1829 purchaser would have been warranted in assuming as of the year 1829, would have been the \$1.25 per acre price at which the choice public lands to the south, closer to settlement than the subject areas, were still available. Certain minimum necessary development, resale and other costs would have reduced this \$1.25 base resale price to a net receipt per acre (before interest or investment) to the prospective developer as follows:

Government (minimum) sale price per acre	\$1.25
Less adjustments	
Cost of survey per acre** ⁹	.0207
Sales and management cost per acre* ⁹	.0532
First 5 years taxable to purchaser** ⁹	.0625
School section 16*** ⁹ (1/35th)	.0357
	<u>.1724</u>
	\$1.0776

Accordingly, the retail resale price at which the prospective 1829 purchaser would have been warranted in projecting estimated sales receipts must be fixed at about \$1.08 per acre, or say \$1.10 per acre. On this basis of the resale price receipts, the previously described anticipated disposal rates, and interest return on invested capital, the prices which a prospective purchaser would have been warranted in paying for Areas 148A, 148B and 147 are justified by the following computations:

Computation of Warranted Value — Area 148 - A

Class One Sections	84,805 acres	} 220,571 acres
Class Two Sections	135,766 acres	
Class Three Sections	279,202 acres	
Total Acres in Area	499,773 acres	
Estimated annual rate of sale 3.4%* ¹⁰	17,042 acres	
Annual receipts from land sales @ \$1.10 per acre	\$18,746	
Number of years required to sell all land in Class 1 and Class 2 Sections	15 years** ¹⁰	
Number of acres to be sold in 15 years in Class 1 and Class 2 Sections	213,750 acres	
Number of acres to be sold in 15 years in Class 3 Sections	41,880 acres	
Total number of acres to be sold in 15 years	255,630 acres	
Anticipated receipts from sales to settlers 15 years @ \$1.10 per acre	\$281,193	
Assuming the above sales price and rates of sale, the price which a prospective 1829 purchaser would have been warranted in paying on the assumption of selling the entire 499,773 acres to recapture his purchase price plus 10% interest on the balance of his investment remaining unamortized each year, would be 53% of the above retail price or	\$149,934	
Land in Class 1 and 2 Sections	\$119,224	
Class 3 Sections	\$ 30,710	

⁹ *33rd Congress, 1st session 1853 - 1854, House Executive Document, No. 710 - Part I, p. 111.

**Purchasers of government land received five years' free taxes. Sellers of competitive lands in Illinois would have labored under this disadvantage in reselling the lands of Areas 147 and 148.

***The government contributed a free section (16) in each township for schools and made other extensive grants for internal developments. A private purchaser would have been required to make concessions in resales in order to compensate for these advantages.

¹⁰ *Class 1 — 17.0% x 12% at total each year = 2.04%
Class 2 — 27.2% x 3% = 0.82%
Class 3 — 55.8% x 1% = 0.57%
Annual rate of sale = 3.42%

**The computations of number of years required to sell all land in Class 1 and Class 2 Sections is as follows:

Total Acres Class 1 - 2	220,571
Estimated Annual Acres Sold in Classes 1 - 2	= 14,250
	= 15.479 years — say 15 years

(See Table 11 - E, Chapter 11.)

APPRAISAL OF ROYCE AREAS 147 AND 148

Value per acre

499,773 acres (average)	30 cents per acre
213,750 acres in Class 1 and Class 2 Sections	56 cents per acre
279,202 acres in Class 3 Sections	11 cents per acre

Assuming five year waiting period before the land could be marketed at retail, this must be reduced by 10% compound interest on the entire purchase price for 5 years to

Average	19 cents per acre
Class 1 and Class 2 Sections	35 cents per acre
Class 3 Sections	7 cents per acre

Computation of Warranted Value — Area 148 - B

Class One Sections	186,039 acres	} 417,474 acres
Class Two Sections	231,435 acres	
Class Three Sections	1,229,916 acres	
Total acres in area	1,647,390 acres	

Estimated annual rate of sale 2.2%*¹¹

Annual receipts from land sale @ \$1.10 per acre	35,418 acres \$38,960
--	--------------------------

Number of years required to sell all land in Class 1 and Class 2 Sections 14 years**¹¹

Number of acres to be sold in 14 years in Class 1 and Class 2 Sections 409,752 acres

Number of acres to be sold in 14 years in Class 3 Sections 86,100 acres

Total number of acres to be sold in 14 years 495,852 acres

Anticipated receipts from sales to settlers 14 years @ \$1.10 per acre \$545,437

Assuming the above sales price and rate, the price of which a prospective 1829 purchaser would have been warranted in paying on the assumption of selling the entire 1,647,390 acres to recapture his purchase price plus 10% interest on the balance of his investment remaining unamortized each year, would be 56% of the above retail price or

Land in Class 1 - 2 Sections	\$237,181
Land in Class 3 Sections	\$ 67,640

Value per acre—1,647,390 acres (average)	19 cents per acre
409,752 acres in Class 1 and 2 Sections	58 cents per acre
1,229,916 acres in Class 3 Sections	5½ cents per acre

Assuming five year waiting period before the land could be marketed at retail, this must be reduced by 10% compound interest on the entire purchase price for 5 years to

Average	12 cents per acre
Class 1 and Class 2 Sections	36 cents per acre
Class 3 Sections	3½ cents per acre

Computation of Warranted Value — Area - 147

Class One Sections	244,331 acres	} 1,129,229 acres
Class Two Sections	884,898 acres	
Class Three Sections	252,557 acres	

Total acres in area 1,381,786 acres

Estimated annual rate of sale 3.2%*¹² 44,194 acres

Annual receipts from land sales @ \$1.10 per acre \$48,613

Number of years required to sell all land in Class 1 and Class 2 Sections 27 years**¹²

Number of acres to be sold in 27 years in Class 1 and Class 2 Sections 1,125,036 acres

Number of acres to be sold in 27 years in Class 3 Section 68,202 acres

Total number of acres to be sold in 27 years 1,193,238 acres

Anticipated receipts from sales to settlers 27 years @ \$1.10 per acre \$1,312,562

Assuming the above sales price and rate of sale, the price which a prospective 1829 purchaser would have been warranted in paying on the assumption of selling the entire 1,381,786 acres to recapture his purchase price plus 10% interest on the balance of his investment remaining unamortized each year, would be 34% of the above retail price, or

Land in Class 1 - 2 Sections	\$451,168
Land in Class 3 Sections	\$ 27,790

Value per acre — 1,381,786 acres (average)	33 cents per acre
1,125,036 acres in Class 1-2 Sections	38 cents per acre
252,557 acres in Class 3 Sections	11 cents per acre

¹¹ *Class 1 — 11.3% x 12% = 1.37%
Class 2 — 14.0% x 3% = 0.42%
Class 3 — 74.7% x ½% = 0.37%
Annual rate of sale 2.16%

**The computation of number of years required to sell all land in Class 1 and Class 2 Sections is as follows:

$$\begin{array}{r} \text{Total Acres Class 1 - 2} \\ \text{Estimated Annual Acres Sold in Classes 1 - 2} = 29,268 \\ = 14,264 \text{ years — say 14 years} \end{array}$$

(See Table 11 - E, Chapter 11.)

¹² *Class 1 — 17.7% x 8 % = 1.42%
Class 2 — 64.0% x 2½% = 1.60%
Class 3 — 18.3% x 1 % = 0.18%
Annual rate of sale 3.20%

**The computations of number of years required to sell all land in Class 1 and Class 2 Sections is as follows:

$$\begin{array}{r} \text{Total Acres Class 1 - 2} \\ \text{Estimated Annual Acres Sold in Classes 1 - 2} = 41,668 \\ = 27.101 \text{ years — say 27 years} \end{array}$$

(See Table 11 - E, Chapter 11.)

VALUE CONCLUSIONS

Conclusions — Justified Purchase Price for Resale

From the above analysis a prospective purchaser could have estimated the price that he would have been warranted in paying for the subject areas based on the prospects of resale to settlers.

In Areas 148A and 148B, if sales could have been commenced immediately, a value of 56 and 58 cents per acre would have been warranted for land in timbered (Class 1 and Class 2) sections. However, in 1829 this area was a wilderness, remote from settlement and beset by Indian troubles. Accordingly, it is logical to assume that a prospective purchaser would have anticipated a waiting period after an 1829 purchase before offering this land to settlers. Interest on investment at 10% during such a carrying period of five years would reduce the warranted value to 35 and 36 cents per acre.

In Area 147, with a high proportion of its area in Class 2 sections due to the sharper (non-glaciated) topography of a great part of its area in northern Illinois and Wisconsin, a lower rate of sale in timbered sections would have been anticipated. However, due to its proximity to the transportation afforded by the Mississippi River, when navigable, and the mining activity there in 1829, an informed purchaser could have assumed a program of annual sales to settlers in certain locations in this area starting immediately. On this basis a price of 38 cents per acre would have been warranted on the basis of

the estimated probable rate of resale of the land in Class 1 and Class 2 sections in Area 147.

Land in Class 3 (non-timbered prairie) sections in Areas 147 and 148A are indicated as justifying a warranted price of 11 cents and 7 cents per acre, respectively, while in Area 148B, with its vast prairies constituting 75% of its total area, the probability of a lesser rate of sale justifies the lower price of 3½ cents per acre.

Estimated Fair Market Values

After consideration of all of the factors influencing the value of this property as outlined in this volume, including the data discussed herein concerning sales of both public and private lands up to 1829 and the warranted prices for the various classes of land based on prospects of resale to settlers as analyzed in the preceding paragraph, it is the conclusion of this appraiser that the fair market value per acre of the subject areas, as units, on July 29, 1829, was as follows:

Area 148A	\$110,000
Area 148B	230,000
Area 147	480,000
Total	<u>\$820,000</u>

Detailed figures as to the total acreages of the various classes of land and my estimated values per acre in each of these three areas are shown on Table 15 - A on the following page 190.

APPRAISAL OF ROYCE AREAS 147 AND 148

TABLE 15 - A

Summary of Value Estimates

Areas 147, 148A and 148B as of July 29, 1829 as Units

Areas	Land Class	Acreage	Price Per Acre	Value
148A	Class 1 and Class 2 Sections	220,571	40 cents	\$ 88,288
	Class 3 Sections	279,202	8 cents	22,336
	Total	499,773		\$110,624
	Average		22 cents	
				Say \$110,000
148B	Class 1 and Class 2 Sections	417,474	40 cents	\$166,990
	Class 3 Sections	1,229,916	5 cents	61,496
	Total	1,647,390		\$228,486
	Average		14 cents	
				Say \$230,000
147	Class 1 and Class 2 Sections	1,129,229	40 cents	\$451,692
	Class 3 Sections	252,557	11 cents	27,781
	Total	1,381,786		\$479,473
	Average		35 cents	
				Say \$480,000
<hr/> Total in Subject Areas		<hr/> 3,528,949		<hr/> \$818,583
				Say \$820,000

APPENDIX

QUALIFICATIONS OF THE APPRAISER

EXPERIENCE

Walter R. Kuehnle was born June 3, 1902, in Chicago, Illinois.

During 1922 to 1928 he was engaged in the general real estate brokerage business in Chicago, and from 1929 to 1931 served in technical capacities of Assistant Director and later as Director of Land Appraisals during 1928 appraisal for reassessment of all real estate in Cook County, Illinois. This project involved detailed appraisal record forms of over 1,100,00 separate parcels of real estate of all types.

In 1931 and 1932 he served as an officer and director of a private appraisal organization, and while identified with this firm supervised a large volume of appraisal work in both Illinois and other states.

In 1932 he was called by the newly appointed County Assessor of Cook County to act in the technical capacity of Chief of the Real Estate Appraisal Division of the Cook County Assessor's office and so served until 1935. In this position he supervised the 1931 quadrennial re-appraisal for tax purposes, on detailed appraisal forms, of the entire 1,100,000 parcels of land and 550,000 main buildings in Cook County, Illinois, at a total value of over seven billion dollars.

Presently, and since 1935, head of Walter R. Kuehnle & Company, real estate appraisers and consultants, 22 West Monroe Street, Chicago, Illinois. During this period he and his organization have specialized in the valuation of real estate in Illinois and elsewhere for many different purposes.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

American Institute of Real Estate Appraisers

- President, (National) (1951)
- President Illinois Chapter (1947)
- Charter Member Illinois Chapter (1932)
- Member Governing Council (National) (1948 - 52)
- Member Since 1932
- Chairman, Education Committee (1949 - 50)
- Lecturer

Pan American Union of Appraisers (UPAT)

- Chairman U.S. Delegation to II Appraisal Congress, Santiago, Chile (1952)
- Chairman U.S. Delegation to III Appraisal Congress, Sao Paulo, Brazil (1954)
- President IV Appraisal Congress, Chicago, Illinois (1957)

Chicago Real Estate Board

- Member Since 1924
- Chairman Sales Division (1930 - 31)
- Chairman Acreage Appraisal Committee (1931)
- General Chairman Valuation Committee (1943 - 44)
- Property appraised totalled thirty - five million dollars.
- Vice President and Chairman Appraisal Division (1945)

Society of Residential Appraisers

- Senior Member

Instructor — Real Estate Valuation

- Northwestern University (1945 - 52)

BIBLIOGRAPHY

BOOKS

- | | | |
|---------------------------------------|------|---|
| Adams, James Truslow | 1940 | Dictionary of American History — Scribner, New York |
| Agricola G. | 1556 | De Re Metallica — Translated by H. G. and L. H. Hoover, 1912 |
| Andreas, A. T. | 1884 | History of Chicago — From the Earliest Period to the Present Time — Chicago, Illinois |
| Angle, Paul M. | 1953 | Here I Live — Chicago Historical Society, Chicago, Illinois |
| Angle, Paul M. | 1935 | Here I Have Lived — A History of Lincoln's Springfield, 1821 - 1865 — Rutgers, New Brunswick, N.J. |
| Atwater, Caleb | 1831 | Remarks Made on a Tour to Prairie du Chien Thence to Washington City in 1829 — Isaac N. Whiting, Columbus |
| Baird, Robert | 1832 | View of the Valley of the Mississippi — Philadelphia |
| Ballance, C. | 1870 | The History of Peoria, Illinois — Peoria, Illinois |
| Berry, Thomas, Senior | 1943 | Western Prices Before 1861 — Harvard University Press, Cambridge, Mass. |
| Blandy, Joseph G. | 1934 | Maryland Business Corp. 1753 - 1852 — Johns Hopkins Press |
| Bogart, Ernest Ludlow | 1924 | Internal Improvement and State Debt in Ohio — Longman, Green & Co., N.Y. |
| Bogges, Arthur Clinton | 1908 | Settlement in Illinois, 1778 - 1830 — Chicago Historical Society, Chicago, Illinois |
| Brown, William H. | 1876 | An Historical Sketch of Early Movement in Illinois for the Legislation of Slavery — Fergus Historical Series No. 4, Fergus Printing Co. |
| Buck, Solon J. | 1912 | Pioneer Letters of Gershom Flagg — Reprinted from the Transaction of the Illinois State Historical Society for 1910, Ill. State Journal Co., State Printers, Springfield, Ill. |
| Butler, James D. | | French Fort at Prairie du Chien and Tay - Cho - Pe - Rah the Four Lake Country — Wisconsin Historical Collection, Wisconsin State Historical Society, Madison, Wisconsin |
| Carlson, Theodore L. | 1951 | The Illinois Military Tract — A Study of Land Occupation, Utilization, and Tenure — University of Illinois Press, Urbana, Illinois |
| Carter, Clarence Edwin | 1934 | Territorial Papers of the United States — U.S. Government Printing Office, Washington D.C. |
| Chapman, Charles C. | 1880 | History of Pike County — Chas. C. Chapman & Co., Chicago, Illinois |
| Chapman, Charles C. | 1879 | History of Tazewell County, Illinois — Chas. C. Chapman & Co. Chicago, Illinois |
| Cheltain, A. L. | | Recollections of Seventy Years |
| Corliss, Carlton J. | 1934 | Trails to Rails — Illinois Central System, Chicago, Illinois |
| Corliss, Carlton J. | 1881 | History of Lee County, Illinois — H. H. Hill & Co., Chicago |
| Dana, E. | 1819 | A Description of the Bounty Lands in the State of Illinois, also, The Principal Roads and Routes — Looker, Reynolds & Co., Cincinnati |
| Davidson, Alexander & Struve, Bernard | 1874 | A Complete History of Illinois 1673 - 1873 — Journal Co., Springfield, Illinois |
| Drake, B. & Mansfield, E. D. | 1827 | Cincinnati in 1826, Cincinnati |
| Dunbar, S. | 1917 | History of Travel in America — Tudor Publishing Co., New York |
| Durrie, D. S. | 1872 | Jonathan Carver and "Carver's Grants" — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin |
| Evans, Paul D. | 1924 | The Holland Land Company — Buffalo Historical Society Publications, Buffalo |
| Faulkner, Harold | 1938 | American Economic History — Harper & Brothers Publishers, New York, London |
| Flint, Timothy | 1832 | The History and Geography of the Mississippi Valley — Cincinnati |
| Ford, Thomas | 1854 | A History of Illinois, 1818 - 1847 — S. C. Grigg & Co., Chicago, Illinois |

Forsyth, Thomas	1872	Journal of a Voyage from St. Louis to the Falls of St. Anthony, In 1819 — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin
Gallatin, A.	1831	Currency and Banking System in the U.S. — Carey and Lea, Philadelphia
Gannett, Henry	1898	Statistical Atlas of the United States — Government Printing Office, Wash. D.C.
Hatcher, Harlan	1944	The Great Lakes — Oxford University Press, London, New York
Hepburn, A. B.	1924	A History of Currency in the U.S. — MacMillan, New York
Hibbard, Benjamin H.	1924	A History of the Public Land Policies — MacMillan Co., New York
Hidy, Ralph	1949	The House of Baring — Harvard Press, Cambridge, Mass.
Inter-state Publishing Co. (Editor)	1881	History of Sangamon County, Illinois — Inter-State Publishing Co., Chicago, Illinois
Kemmerer, Donald L. & Bogart, Ernest	1953	Economic History of the American People — Longmans Green, New York
H. F. Kett & Company (Editor)	1878	History of Jo Daviess County, Illinois — H. F. Kett & Co., Chicago, Illinois
Kinzie, Juliette	1932	Wau - Bun — The Early Days in the Northwest, R. R. Donnelley, Chicago
Mansfield, John B.	1899	History of the Great Lakes — Chicago Deers, Chicago, Illinois
Meeker, Moses	1872	Early History of the Lead Region — Wisconsin Historical Collections, Wisconsin State Historical Society, Springfield, Illinois
Muzzay, Williamson & Phelps	1879	History of Adam County, Illinois, Chicago, Illinois
Muzzey, David S. and Kidger, Horace	1953	The United States — Ginn & Co., Boston
Pease, Theodore C.	1919	The Frontier State, 1818 - 1848 — Illinois Centennial Commission, Springfield, Illinois
Pease, Theodore C.	1949	The Story of Illinois — University of Chicago Press, Chicago, Illinois
Peattie, Donald Culross	1938	A Prairie Grove — Simon & Schuster, Inc. N.Y.
Peterson, William J.	1937	Steamboating on the Mississippi — The Waterway to Iowa — The State Historical Society of Iowa
Pierce, Bessie L.	1937	A History of Chicago — Knopf, New York
Pike, Zebelon M.	1810	Expedition — Philadelphia (Expeditions of Zebelon M. Pike to Headwaters of the Mississippi River, through Louisiana Territory and in New Spain, during the years 1805 - 06 - 07. New edition now first reprinted from the original of 1810, the copious critical commentary, memoir of Pike, and complete index by Elliott Coues, F. P. Harper, N.Y. 1895.)
Prucha, Francis P.	1953	Broadax and Bayonet: — The Role of the United States Army in the Development of the Northwest 1815 - 60 — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin
Quaife, Milo M.	1944	Lake Michigan — Bobbs - Merrill, Indianapolis
Quaife, Milo M.	1923	Chicago's Highways, Old and New — Keller, Chicago
Quaife, Milo M.	1923	Chicago and the Old Northwest, 1673 - 1835 — University of Chicago Press, Chicago
Rice, James M.	1912	Peoria City and County, Illinois — S. J. Clarke, Chicago
Richmond, C. W. & Vallete	1857	A History of the County of DuPage, Illinois — Scripps, Bross Spears, Chicago
Rogin, Leo	1931	The Introduction of Farm Machinery in Its Relation to the Productivity of Labor in Agriculture of the U.S. during the 19th Century — Univ. of Calif. Press, Berkeley, California
Sakolski, A. M.	1932	The Great American Land Bubble — Harper and Brother Publishers, New York and London
Sandburg, Carl	1926	Abraham Lincoln, "The Prairie Years" — Harcourt Brace, New York
Schaeffer, Joseph	1922	A History of Agriculture in Wisconsin — Wisconsin Domesday Book, General Study, Vol. 2 — State Historical Society, Madison, Wisconsin

Schafer, Joseph	1932	The Wisconsin Lead Region — State Historical Society of Wisconsin, Madison, Wisconsin
Schoolcraft, Henry R.	1834	Narrative of An Expedition through the Upper Mississippi to Itasca Lake, Etc. — Appendix — Remarks on the Lead Mine Country on the Upper Mississippi — Harper, N.Y.
Schoolcraft, Henry R.	1821	Narrative Journal of Travels through the Northwestern Regions of the United States — Albany
Schultz, William John and Caine, M. R.	1937	Financial Development of the U.S. — Prentice-Hall, New York
Shireff, Patrick	1835	A Tour Through North America — Together With a Comprehensive View of Canada and the U.S. — Edinburgh
Stevens, Frank E.	1881	History of Lee County — H. H. Hill, Chicago
Stewart, John W.	1857	Early History of Green County in Wisconsin — Wisconsin State Historical Society, Report and Collections, Madison, Wisconsin
Stuart, James	1833	Three Years in North America, II — N.Y.
Studenski, Paul & Kroos, Herman E.	1952	Financial History of the United States — McGraw - Hill, N.Y.
Switzler, William F.	1888	Commerce of the Mississippi and Ohio Rivers
Taylor, George Rogers	1951	The Transportation Revolution, 1815 - 1860 — The Economic History of the United States — Rinehart, N.Y.
Tanner, Henry S.		Immigrants and Travelers Guide to the West — Philadelphia, Pa.
Thorpe, Willard L.	1926	Business Annals — National Bureau of Economic Research, Inc.
Thwaites, Reuben G.	1888	Narrative of Morgan L. Martin — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin
Thwaites, Reuben G.	1895	Notes on Early Lead Mining in the Fever River (Galena) Region — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin
Thwaites, Reuben G.	1892	Story of the Blackhawk War — Wisconsin Historical Collections, Wisconsin State Historical Society, Madison, Wisconsin
Treat, Payson J.	1910	The National Land System 1785 - 1820 — E. B. Treat & Co., N.Y.
Trewartha, Glenn T.	1940	A Second Epoch of Destructive Occupance in the Driftless Hill Land — American Association of Geographers
Zandt, Van & Biddle, Nicholas	1818	A Full Description of the Soil, Water, Timber, and Prairie of Each Lot of Quarter Section of the Military Land Between the Mississippi and Illinois Rivers — Washington, D.C.

Reports and Government Documents

Bell, W. H.	1844	War Dept., Report on Mineral Land of the Upper Mississippi, Sept. 30, 1842 — Doc. 43, 29th Congress 1st Session, House of Representatives
Chamberlin, Thomas C. & Salisbury, Rollin D. Garrett, Wiggins V.		Preliminary Paper on the Driftless Area of the Upper Mississippi Valley — U.S. Geological Survey's 6th Annual Report
Jones, Frederick W.		Reports of Cases Argued and Determined in the Supreme Court of the State of Illinois
Owen, David D.	1844	National Industrial Conference Board 1953 - 55 — Thomas Y. Crowell, New York
Owen, David D.	1844	Report of a Geological Exploration of Part of Iowa, Wisconsin, and Illinois — Senate Doc. 407, 28th Congress, 1st Session Reprint of 1840 edition with charts, sections, and other illustrations and slightly revised.
Owen, David D.	1846	On the Geology of the Western States of North America — Quarter Journal Geology Society, London
Owen, David D.	1856	Report of the Geological Survey in Kentucky
Royce, Charles C.	1896-97	Indian Land Cessions in the United States — 18th Annual Report of the Bureau of American Ethnology
Stewart, Charles L.	1957	Land Opportunities for & Limits on Pioneer Farming in Central and Northern Illinois in the 1820's and 1830's — 1957 Special Report — Dept. of Agricultural Economics, Coll. of Agriculture, University of Illinois, Champaign, Illinois
Whitney, Josiah D.	1854	The Metallic Wealth of the United States — Senate Doc. 1, 21st Congress, 1st Session, Serial 192
Whitney, Josiah D.	1858	Lead, in Report on the Geological Survey of the State of Iowa (for 1855 - 56) Vol. 1 — published by authority of the Legislature of Iowa

- | | | |
|---------------------------------------|------|--|
| Whitney, Josiah D. | 1862 | Economical and Mining Geology — In Report of the Geological Survey of the State of Wisconsin Vol. 1 — printed by authority of the Legislature of Wisconsin |
| Winslow, Arthur | 1894 | Lead and Zinc Deposits — Missouri Geological Survey, Vol. 6 - Jefferson City, Mo. |
| Wisconsin State
Planning Committee | 1934 | Study of Wisconsin and Its Resources, Its Physical, Social and Economic Background
American State Papers, Public Lands — Vols. 1, 3, 4, 5, 6, and 7
Commissioner General Land Office Annual Report — Years of 1847 and 1850 |

Bulletins and Journals

- | | | |
|---|---------|--|
| Agnew, A. F. | 1955 | Application of Geology to the Discovery of Zinc-Lead Ore in the Aug. Wisconsin - Illinois - Iowa District — Mining Engineering |
| Bain, H. F. | 1904 | Zinc and Lead Deposits of Northwestern Illinois — U.S. Geological Survey, Bull. 246 |
| Bain, H. F. | 1916 | Zinc and Lead Deposits of the Upper Mississippi Valley — U. S. Geological Survey Bulletin 294 |
| Burchard, Edward L. | 1925 | Early Trails and Tides of Travel in the Lead Mine and Blackhawk Country — Illinois State Historical Society Journal, State Printer, Springfield Illinois |
| Heyl, Allen V. | 1955 | Zinc, Lead, Copper Resources and General Geology of the Upper Mississippi Valley District. — U. S. Geological Survey Bulletin 1015G |
| Hodge, J. T. | 1842 | On the Wisconsin and Missouri Lead Region — American Journal Science |
| Gates, Paul W. | 1931 | The Disposal of the Public Domain in Illinois — 1848 - 56 Journal Feb. of Economic and Business History, Ill. |
| Lee, Judson F. | 1917 | Transportation — A Factor in the Development of Northern Illinois Previous to 1860 — Illinois State Historical Society Journal, State Printer, Springfield, Illinois |
| National Industrial
Conference Board (ed.) | 1953 | Economic Almanac |
| Pooley, William V. | 1908 | The Settlement of Illinois from 1830 to 1850 — Bulletin of the University of Wisconsin No. 220 - Madison, Wisconsin |
| Schockel, B. H. | 1916 | History of Settlement and Development of Jo Daviess County, Illinois — State Geological Survey Bulletin 26
Journal of the Continental Congress — Vol. 28
Miner's Journal, Galena, Sept. 1828 & Aug., 1829 |
| Thompson, Jess M. | 1935-36 | "Pike's County Seat and Its Effect on the Political Destiny of the State of Illinois," in Pike County Republican |
| U.S. Dept. of Commerce (ed.) | 1949 | Historical Statistics of the United States, 1789 - 1954 — Washington, D.C. |

Unpublished Thesis

- | | | |
|----------------|------|--|
| Nelson, Peter | 1930 | History of Agricultural Illinois (with special reference to types of farming) Thesis — University of Illinois — Champaign, Illinois |
| Phillip, F. M. | 1896 | History of State Banking in Illinois — Thesis — University of Illinois, Urbana, Illinois |

Newspapers & Magazines

Galena Advertiser — Years of 1828, 1829, 1830 and 1843
Harper's Magazine — Year of 1866, Vol. 32
Historical Magazine — Relation of Father Pablon
National Intelligencer — June, 1829
Niles Weekly Register — Aug. 1814, Oct. & Dec. 1829

Miscellaneous

Bureau of Marine Inspection and Navigation — 1936
Merchant Marine Statistics
Kapplers Indian Treaties — Vol. 2
Major Long's Expeditions

INDEX

A

Act of
 May 20, 1785, 69
 May 18, 1796, 71
 May 10, 1800, 59, 71, 72
 March 3, 1807, 159
 May 6, 1812, 111, 112
 April 29, 1816, 112, 131
 April 24, 1820, 59, 72
 March 30, 1822, 103
 March 2, 1827, 101
 May 24, 1828, 103
 July 11, 1846, 176
 Relief measures in public land sold, 71
 Agnew, A. F., 143—144, 146
 Allegheny Mountain, 101
 American Fur Company, 39, 43
 Analysis of lead carbonate, 140
 Antoine and Francois Leclerc, 3
 Appalachian Mountain, 52
 Arch of Galena, 141
 Archange Ouilmette, 3
 Area 50, 134
 77, 103, 112
 78, 4, 103
 147, 112, 124, 137, 139, 142, 159, 160
 148, 112, 124
 175, 134
 Ash furnace, 145
 Atlantic coast, 44
 Atlantic Seaboard Area, 30
 Awn-Kote, 3

B

Bain, H. F., 179
 Bank, 44—46
 Barley, 29
 Barter-sale deed, 117
 Basis of estimating sale rate, 124
 Bean, T., 30
 Beardstown, 37, 40
 Bee Town, 160
 Beef cattle, 30
 Belvidere, 38
 Berry, T. S., 38
 Black Hawk War, 4, 42, 43, 52, 53, 54, 58
 Blacksmith, 29, 31
 Blanchard, R. C., 40
 Blue Mounds, 131, 159
 Bluffs, 162
 Boeuf Sioux, 131
 Bomford, G., 161, 162, 179
 Bond, S., 159
 Bond, T., 103
 Bottom lands, 65
 Bridgewater Canal, 101
 British investment, 102
 Buck Lead Mine, 134
 Buffalo, 101
 Burdine, C., 161
 Burr oak, 31, 139

C

Butterfat, 29
 Caldwell, Billy, 3
 Canal in Ohio, 102-103
 Canoe, 42, 43
 Carver, J., 131
 Cast iron mold board, 31
 Catfish Creek, 134

Chandler's Map, 44
 Character of settlers, 29, 53
 Chicago, 3, 4, 39, 42, 43, 44, 103, 139
 Chicago Packet, 39
 Chicago Road, 42
 Chippewa, Ottawa and Potawatomi, 4, 112, 131, 134, 135
 Cincinnati, 37, 38, 40, 103
 Class One Section, 82, 123
 Class Two Section, 82, 123—124
 Class Three Section, 83, 124
 Classification of desirability, 81-83, 123
 Classification of sections, 82—83
 Clay diggings, 142
 Cleveland, 103
 Climate, 33
 Coal measure, 139
 Coles, E., 103
 Columbus, 39
 Comparable Area, 77, 79
 acreage of, 77, Table 8-A, 88
 characteristics of, 78
 type land sold in, 78, 79, Tables 8-B, 8-C, 80, 123, Table 11-D
 type land unsold in, 78
 Cook, D. P., 114
 Corn, 29
 Cost of canal, 101
 Cost of land sales and management, 187
 Cost of road sketches, 42
 Cost of survey, 187
 Cost of transportation, 30—31
 Cost of turnpikes, 101
 Cotton plantation system, 53
 County of
 Adams, 40, 56, 114
 Berrien, 43
 Calhoun, 40
 Clark, 65
 Clay, 65
 DuPage, 42
 Edgar, 65
 Fulton, 40, 56, 114
 Grant, 131, 137
 Greene, 40
 Hancock, 56, 114
 Iowa, 137
 Jo Daviess, 9, 131, 134, 137, 141
 Kendall, 42
 Lafayette, 9, 65, 137, 142, 160
 Lawrence, 65
 Lee, 176
 Macon, 40
 Macoupin, 40
 Madison, 54
 Marion, 65
 Montgomery, 40
 Morgan, 40
 Ogle, 9
 Pike, 40, 56
 Peoria, 43
 Rock Island, 9
 Sangamon, 55
 Schuyler, 40, 56
 Shelby, 40, 65
 Tazewell, 42, 65
 Vermillion, 65
 Whiteside, 9
 Will, 42
 Cows, 29
 Credit system, 59, 69, 71, 72, 74
 Crops, 29—30, 31
 Crumbled rock, 142
 Cumberland Gap, 52
 Cumberland Road, 39
 Current money, 47

D

Danville, 42, 43
Date of surveyings, 9
DeLisle's chart, 131
Des Moines Rapids, 38
Detroit, 39, 43
Diggings, 147, 148
Dixon's Ferry, 4, 42, 43, 44
Dixon, J., 43
Dodgeville, 3, 174
Domestic animal, 29
Drainage, 33
Driftless area, 137
Dry bone, 140
Duncan, 61, 116
Dubuque, 131
Dubuque, J., 134
Dubuque mines, 134, 159

E

East coast, 37
East Pittsburgh, 37
Eastern Overland Drover Developments, 30
Economy of early Illinois, 30
Edwardsville, 34, 45, 55
Edwardsville Land Office, 134
Eighty-acre tract, 77, 78, 82
Erie Canal, 37, 39, 43, 44, 101, 102, 103, 104
Erosion, 7, 8, 9
Estimated
 acreage sold, 127, Table 11-E
 basis of future sale rate, 124-125
 retail price, 186, 187-188
 rate of resale, 125-126, 187, 188
 justified retail value, 187-188
 value, 189, 190
 value facts, 185
Ewing, W. L. D., 60, 65

F

Fair Play, 160
Fair market value, 43, 69
Farm animals, 30
Farmers' income, 30
Featherstonhaugh, G. W., 137
Fertile well-drained soil, 7, 80, 82
Fibres, 29
Fields, 29
First-rate land, 65, Tables 6-C, 6-D, 6-E
Fissures, 142, 143
Five leagues square, 3, 112, 131, 134, 135, 148, 157, 164, 172, 186
Flagg, G., 30, 34, 47, 120
Flatboats, 31
Float mineral, 142, 147
Flour, 29
Flour mills, 30
Ford, T., 45
Forts, 4
 Armstrong, 3, 4, 43
 Dearborn, 4, 39, 43
 Clark, 3, 42
 Crawford, 4
 Howard, 4, 43
 Wayne, 43
Fox River Valley, 42
Fourth-rate lands, 66
Francois Bourbonne, 3
Frontier area, 55, 56
Fuel, 30, 31

G

Galena, 3, 4, 40, 41, 42, 43, 44, 58, 77, 161, 162, 164
Galena Dolomite formation, 33, 140
General Land Office, 60, 61
General warranty deed, 116, 119

Graduation price, 60, 61, 74
Grand Detour, 31
Grass, 29
Graham, G., 60
Gratiot's Grove, 3, 160
Gravel mineral, 147
Great Lakes, 38, 39, 54, 58, 101
Great Sauk Trail, 42
Green Bay, 3, 42, 43, 131, 139
Green Bay Road, 42
Groseiller, 131

H

Hamilton, A., 70
Harrison, W. H., 111
Hatched green, 78
Health for settlement, 34
Hibbard, B. H., 71
Hindsight—rate of sale, 128
Hindsight—lead land, 176
Hodge, 139
Hogs, 30
Hoosier Crevice, 43, 141
Horse, 29
Hubbard, G. S., 43
IBM cards, Preface, 78

I

Illinois ague (malaria), 34
Illinois Military Tract, 37, 39, 40, 55, 56, 104, 111, 112, 116, 117, 119, 186
 acreage of, 56, 63, 111, 112
 bounty grants, 111
 bounty warranty, 56, 113
 characteristics of, 56, 113
 enlargement of, 112
 land speculation in, 114-115
 location of, 55
 tax free in, 56
 tax sale in, 115-116
Illinois-Michigan Canal, 37, 39, 42, 101, 103, 104
 acreage of, 101, 104
 characteristics of, 101
 company, 103
 date completed of, 4
 early planning, 103-104
 land grants in, 4, 101
 sale of, 104-107
 type land sold in, 104-107
Illinois valley, 30
Immigration to Area 147, 172
Indications of value conclusions, 185
Inner quartile range, 119
Insurance company, 46
Interest rate, 47-48
Individual Indian reserves, 3
Iron mold board, 31
Iron plow, 31

J

Jacksonville, 40
Jane Miranda, 3
Joliet, M. L., 103
Johnson, J., 161
Jones, M., 159
Josephine, S. B., 38

K

Keelboats, 30, 31, 37, 103
Kettle Chief's Fox Village, 131, 134
Kellogg, O., 43
King, H., 144, 145
Kinzie, J., 4, 7, 39
Kickapoo cession, 55, 56
Kickapoo Creek, 42

L

La Framboise, 3
 Lake Erie, 39, 101, 102, 103
 Lake Michigan, 3, 4, 37, 39, 42, 58, 101, 103, 104, 112
 Lake Ontario, 39, 70
 Lake of Peoria, 39, 103
 Lake Seneca, 70
 Land price
 large sales, 69—70, 119, Table 10-D
 Holland Company, 70
 Morris, 70
 Ohio Company, 69
 Phelps and Gorham, 70
 Pulteney, W. J., 70
 Sciato Company, 69
 Cost of, 70
 Symes, J. C., 69
 small sales, 114, Table 10-A, 117, Table 10-B,
 Table 10-C, 120, Table 10-E, 121, Table 10-F
 Land value 1800 to 1820, 69
 Lead carbonate, 140
 Lead price, 175, 179, 180
 Lead production, 134, 176—177, 180, Table 14-D
 Lead region, 33, 131
 acreage of, 154, 169, 172
 crevice and fissure in, 142, 143
 distribution of lead deposit, 146—148, 154
 distribution of lead bearing in, 154, 155, Table 13-A,
 156, Table 13-B, Table 13-C, 157
 entrepreneurs' rewards, 174
 governmental expenses of superintendence in, 175,
 Fig. 14—9, 176
 first mineral lease in, 161
 Indian opposition in, 111
 lease in, 134, 159, 160, 162, 164, 168, 169
 leasing policy, 159
 permanent settlement in, 160
 prospecting for lead in, 172—173
 rent to government from, 175, 176, Table 14-C, Fig. 14—8
 surface indications of lead ore in, 142
 timber in, 139
 transportation in, 137, 139
 Upper Mississippi Valley in, 134, 137, 139, 159
 water in, 139
 Leggett, T. C., 174, 180
 LeSueur, 131
 Lincoln, Abraham, 31
 Little Macoultely Creek, 160
 Livestock, 29
 Log furnace, 145—146
 Log cabin, 31, 42
 Long, S. H., Major, 4, 103
 Long-term loans, 44
 Louisiana Military Tract, 111
 Louisville, 37
 Low place, 34
 Lower magnesian limestone, 140

M

Mackinac Island, 39
 Mackinac (W), 39, 42
 Madeline, 3
 Madison, 4
 Magnesian cliff limestone, 140
 Mails in Illinois, 40, 44
 Malaria, 34
 Marysville, 40
 Map
 Chandler's, 44, 147, 148, 151, 152
 W. DeLisle's, 131
 Illinois Land Offices', Fig. 5—7
 of lead mines and diggings, 138
 of lead region, 138, 151, 152, Fig. 13—13
 Owen's, 138, 148
 of soils, 17—28, 87—99
 of U.S.G.S. Bulletin 1015-G, 148, 149, 154

 of U.S. Bureau of Mines, 148, 153
 Martin, M. L., 172, 173
 Maumee, 103
 McKee, J., 134
 Mechant Hatche, 160
 Michigan Military Tract, 111
 Michigan Territory, 77
 Milk, 29
 Mills, 29—30
 Milwaukee, 39, 139
 Mineral lands (also see lead region), 112
 price of, 176
 Mining permits, 162, 164, 168, 169
 Mining method, 144, 145
 Missouri, S. B., 38
 Missouri Military Tract, 112
 Mo-ah-way, 3
 Money scarcity, 30
 Mosquitoes, 34
 Most preferred lands, 7, 30, 31, 79, 123
 Movements of settlement, 52—53, 78
 Mules, 29
 Mutton, 29
 Myasma, 34

N

Naperville, 42
 National
 economic outlook, 43—44
 debt in 1829, 46
 income in 1829, 46
 government expenditures in 1829, 46
 revenue in 1829, 44
 National roads, 39—40
 Navigation of Great Lakes, 58
 Net resale price, 187
 New England, 54
 New Orleans, 38, 40, 139
 New York, 101, 102
 Niagara Falls, 39
 Nicolet, M. J., 131
 Niles, 43
 Nontimbered soil, 81

O

Oak opening, 31, 56
 Oats, 29
 Ogee's Ferry, 3, 43—44
 Ogee, J., 43
 Ohio Canal, 102
 land grants, 102
 Ohio Valley, 101
 Old Northwest Territory, 72
 Open prairie, 31
 Ottawa, 3, 4, 42, 103, 104
 Owen, D. D., 137, 139, 140, 141, 142, 144, 145, 146, 147, 154
 Oxen, 29

P

Palmyra, 45
 Pasture, 29
 Patent, 114
 Pentremital limestone, 139
 Percentage of slope, 7
 Permeability, 7
 Paul, R., 103
 Peoria, 3, 40, 42, 43, 44
 Phillips, E., 139
 Pierre Leclerc, 4
 Pioneer's eye, 78
 Pirogues, 31
 Pike, Z. M., 134
 Plan for disposing of public lands, 70
 Plainfield, 42
 Platteville, 172

Plow, 31
 Polk, J. K., 176
 Population
 affects land demand, 60
 Alabama, 52
 average age of, 51
 each census, center of, 51, Fig. 5—3
 Chicago, 3, 58
 density of, 51, Fig. 5—2, 54, Table 5-A, Table 5-B
 DuPage County, 42
 Fulton County, 40, 56
 Galena, 3
 Green Bay, 3
 growth vs. effect demand, 60
 Illinois, 48, 52, 53, 54, 58, Fig. 5-5, Fig. 5-6, 60, 103
 Indiana, 52, 53, Fig. 5-5
 Kentucky, 52, 53, Fig. 5-5
 Louisiana, 52
 Madison County, 54
 Military Tract, 55, 114
 Mississippi, 52
 movement, 51
 New England, 53
 Ohio, 48, 52, 53, Fig. 5-5
 Peoria, 3
 Prairie du Chien, 3
 Quincy, 42
 rate, 51
 rural, 29, Fig. 5-1
 St. Louis, 54
 Sangamon County, 40
 Schuyler County, 40
 Shawneetown, 40
 Springfield, 54
 Tennessee, 52
 tide of westward, 51
 urban, 51, Fig. 5-1
 of United States, 1790 to 1830, 51, Fig. 5-1, 52
 Portsmouth, 103
 Potosi diggings, 131
 Power, 29
 Prairie, 31
 Prairie du Chien, 3, 4, 38, 134
 Prairie groves, 31
 Prairie soil, 7—8, 31, 81
 Preferred land type, 30, 31, 54, 55, 56, 58, 66, 80
 Preferred locations, 30, 31
 Prophetstown, 43
 Public land policies, 69—74
 Public land sales, 44, 46, 59, Table 6-A, 60
 annual receipt of, 60
 cost of, 187
 credit system, 59, 69, 71, 72, 74
 estimated quantity per year, 65
 first sale, 62, 63, 69
 in Indiana, 65
 in Illinois, 59, 61, 63, Table 6-F, Table 6-G
 in Ohio, 65
 graduation price, 60, 61, 74
 land classes in, 65—66
 minimum acreage unit of, 59, 70, 73
 minimum price, 59, 60, 62, 69, 71, 72, 73, 74, 111, 185, 187
 reason for not increasing sale rate, 60
 resolution of, 61—62, 74
 types land salable in 1829, 65
 Public land titles, 111

Q

Queen-of-the-West, 38
 Quincy, 42
 Quit claim deed, 117

R

Raddison, 131
 Railroads, 37, 43
 Rainfall, 34

Rapids, 38
 Rate of transportation
 downstream, 38
 upstream, 38
 Red Head's Village, 160
 Red Rover, S. B., 38
 Report
 Edwardsville Land Office's, 62
 General Land Office's, 61, 62, 65
 Hamilton's, A., 70
 Kaskaskia Land Office's, 62
 Mineral Point Land Office's, 173
 Palestine Land Office's, 62
 Shawneetown Land Office's, 62
 Springfield Land Office's, 74, 162
 Vandalia Land Office's, 60, 62, 65—66, 72
 River
 Apple, 160
 Chicago, 4, 42, 101, 103
 Cumberland, 52
 Desplaines, 4, 42, 103, 104
 Demoin (Des Moines), 38
 Dupage, 42
 Erie, 103
 Fever, 131, 160, 161
 Fox, 3, 103, 104, 111
 Grant, 131
 Illinois, 37, 38, 39, 40, 42, 55, 56, 77, 101, 103, 104, 111, 112, 113
 Kaskaskia, 54
 Kentucky, 71
 Little Calumet, 103
 Mississippi, 4, 30, 37, 38, 40, 42, 55, 56, 101, 102, 103, 111, 113,
 131, 134, 137, 139, 159
 New Orleans, 101
 Ohio, 38, 40, 54, 71, 102, 103
 Platte, 131
 Rock, 38, 43, 137
 Sangamon, 30, 39, 55, 56, 77
 Wabash, 37, 103
 Wisconsin, 103, 111, 112, 134, 137, 140
 Riverboats, 30
 Road to Chicago, 42, 43
 Road to Galena, 43
 Robinson, Alex, 3
 Rock Island, 112
 Root system, 31
 Routes of settlement, 52
 Routes to Chicago, 42—43
 Rover, S. B., 38

S

St. Charles, 40
 St. Louis, 38, 40, 43, 44, 54, 139
 Sale of canal land, 104
 Sale of non-timber lands, 120
 Sangamon Area, 40, 62, 80
 Sangamon Country, 38, 39, 40
 Sangamon River Area, 79, 55, 63
 Sauk and Fox, 111, 112, 131
 Saw blades, 31
 Schafer, J., 148
 Schockel, B. H., 139
 Schoolcraft, H. R., 137, 146
 Second Bank, 44, 46
 Second-rate land, 65
 Self-scouring mold board, 31
 Self-sufficiency, 30
 Settlement in southern Illinois, 40
 Shab-eh-nay, 3
 Shallcross, G. P., 38
 Shawneetown, 40, 54
 Sheep, 29
 Sheldon, J. P., 173
 Sheldon Thompson, S. B., 39
 Shipment of farm products, 30, 31
 Shull, J.S., 160
 Sierra de Gador lead district in Spain, 147

Sinsinawa Creek, 160
 Slavery, 55
 Small prairies, 56
 Smelter's income, 174
 Smelter's license, 162, 168, 169
 Smelting operations, 145—146
 Snake Diggings, 131
 Soil categories, 7—9, 78
 Soil maps, 17—28, 87—99
 black on, 78
 blue on, 78
 first-class section on, 9, 82, 83
 green on, 9, 78
 red on, 9, 78
 second-class section on, 12, 82—83
 third-class section on, 12, 83
 solid green, 9, 78
 Specie, 46
 Specie payment, 71
 Springfield, 37, 40, 104
 Springfield Land Office, 55, 63, 77, 79, 80, 81, 104, 123
 rate of sale in, 123, 124, 126, 128
 Springfield-Peoria route, 42
 Squatters' rights, 113
 Stagecoach, 30
 State bank notes, 47
 State road, 43
 Steamboats, 30, 37, 38—39, 101
 on the Upper Mississippi, 38
 on the Illinois River, 39
 on Lake Michigan, 39
 Steel plow, 31
 Stewart, J. T., 40
 Straw, 29
 Stuart, 116
 Subject areas
 acreage of, 3, 12, 187, 188, 190, Table 15-A
 boundaries of, 9
 characteristics of, 3, 4
 relative financial magnitude of, 46—47
 total value of, 189, 190, Table 15-A
 Sugar, 30
 Surface indications of lead ore, 142
 Surveying public lands, 69
 Surveyor's map, 29, Fig. 1-2, 1-3
 Surveyor's timber, Footnote in Table 1-A, 13, 81
 Swamplands, 9, 31
 Swindler's Ridge, 142
 Swine, 30

T

Talisman, S. B., 38
 Tariff on lead price, 179—181
 Tax delinquency, 115
 Tax free, 56
 Tax title, 116
 Teamster, 44
 Territory of
 Illinois, 111
 Louisiana, 111
 Louisiana, 111
 Michigan, 59, 77, 111
 Missouri, 134
 Wisconsin, 59
 Textile mills, 29
 Three leagues square, 134
 Third-rate lands, 65
 Third Principal Meridian, 77
 Timber on non-timber soils, 81
 Timber soil, 78, 81
 Timbered land section, 78, 81, 82, 186
 Timothy, 29
 Thomas, M., 137, 162, 164, 168, 179

Tobacco, 29
 Toledo, 102
 Township, 29, 69, 111
 Trail, 40
 Fort Clark and Wabash, 42
 Great Sauk, 42
 Green Bay, 42
 Hubbard's, 43
 Kellogg's, 43, 139
 Lewistown, 43
 Prairie, 42
 Sucker, 172
 Wabash, 42
 Wilderness, 52
 Transportation, 30, Chapter 3
 Transportation in northern Illinois, 42
 Treaty of
 August 3, 1795 (Greenville), 71
 November 3, 1804, 111
 August 24, 1816, 3, 4, 112, 131, 134, 135, 159, 162, 172, 186
 July 18, 1819 (Kickapoo), 55
 July 30, 1819 (Edwardsville), 53
 July 29, 1829, 3, 127, footnotes in Table 11-E
 Trend of sale rate, 125
 Trinton, S. B., 38
 Trustees of canal, 101, 107
 Turnpikes, 101

U

Upper Mississippi Valley, 43, 131, 134, 139, 159, 160, 175
 Upper Mississippi Valley lead district, 140, 145, 147, 148
 Upper sandstone, 140
 Usage of timber, 55
 Value indicated by contemporary opinion, 185—186

V

Vandalia, 39, 40, 44
 Vandalia Land Office, 60
 Victoire Pothier, 3
 Vincennes, 40, 43
 Vincennes Trace, 42, 43
 Vinegar Hill diggings, 160
 Virginia, S. B., 38

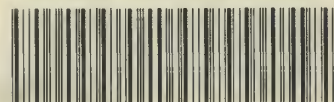
W

Waish-Kee-Shaw, 3
 Wage of miners, 172, 174
 Wagon, 30, 31
 Walk-in-the-Water, 39
 War of 1812, 55
 Warranty deed, 116
 Wau-pon-eh-see, 3
 Well-drained prairie soil, 81
 Welland Canal, 39
 Western reserve, 70
 Wheat, 29
 Wheeling, 37
 Wheelwrights, 30
 Whitney, J. D., 142, 144, 147, 148, 179
 Wild animal, 29
 Wild hay, 29
 Winnebago Village, 137
 Winnebago War, 4
 Winslow, A., 179
 Woodland, 31
 Wooden plow, 31

Y

Ypsilanti, 43

UNIVERSITY OF ILLINOIS-URBANA



3 0112 031878025